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RECOMMENDATIONS CONCERNING NATIONAL INTEREST LANDS

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COMMITTEE PRINT

LAND PLANNING AND POLICY IN ALASKA

RECOMMENDATIONS CONCERNING NATIONAL INTEREST LANDS

PREPARED BY THE

JOINT FEDERAL-STATE LAND USE PLANNING COMMISSION FOR ALASKA

PRINTED AT THE REQUEST OF

HENRY M. JACKSON, *Chairman*

COMMITTEE ON INTERIOR AND INSULAR AFFAIRS UNITED STATES SENATE

JUNE 1974

Printed for the use of the
Committee on Interior and Insular Affairs

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MEMORANDUM OF THE CHAIRMAN

To: Members of the Senate Committee on Interior and Insular Affairs:

In 1971, the Congress passed the Alaska Native Land Claims Settlement Act.

One of the most important problems facing the State of Alaska and the Federal Government in connection with the settlement of the land claims issue and the gradual lifting of the administrative and secretarial order "land freeze" which had operated in Alaska prior to the Act is to develop rational and coherent land use planning.

In order to preserve the environment and protect the public interest in the Federal lands in Alaska without, at the same time, frustrating the reasonable expectations of the Native people and the State to exercise the rights granted to them by the Settlement Act and the Alaska Statehood Act, this committee and the Senate placed two key provisions in the legislation.

Section 17 of the Act directed the Secretary of the Interior to conduct a detailed study of all public lands in Alaska to determine their suitability for inclusion within four main systems: National Parks, National Forests, National Wildlife Refuges, and National Wild and Scenic Rivers. The Secretary's recommendations for these so-called "d–2" lands were received by the Congress in December, 1973 and under the provisions of the Act, Congress has 5 years in which to consider those recommendations and provide for the inclusion of those lands within the four systems.

The second provision was the creation of a Joint Federal-State Land Use Planning Commission to undertake a process of statewide land use planning, review and make recommendations with respect to needed changes in laws, policies, and programs.

As the Congress proceeds to consider the ultimate disposition of the "d–2" lands, I think it would be of great benefit not only to the members of the committee, but also the Senate itself and to all interested persons, to have the initial recommendations of the Joint Commission before them. Accordingly, I have requested that the Commission's initial recommendations be published as a committee print.

HENRY M. JACKSON, *Chairman.*

LETTER OF SUBMITTAL

Federal-State
Land Use Planning Commission
For Alaska

733 W. FOURTH AVENUE, SUITE 400
ANCHORAGE, ALASKA 99501

August 2, 1973

Honorable Rogers C. B. Morton
Secretary of the Interior
U.S. Dept. of the Interior
Washington, D.C. 20240

Dear Mr. Secretary:

We are pleased to transmit the enclosed recommendations in accordance with the direction given the Commission in Section 17(a)(7) of the Alaska Native Claims Settlement Act. This second set of recommendations is directed toward the use of lands withdrawn by you for study and possible inclusion in National Forest, Parks, Wild and Scenic Rivers, and Wildlife Refuge Systems.

The intergovernmental structure of the Commission and the procedure we have followed combine public testimony, factual data, expert interpretation by an interdisciplinary team, and first-hand knowledge of Alaska and its people. We believe that the resulting recommendations are sound and fair. This report is a significant step in deliberate, long-range planning for the use of land and resources in Alaska. We believe that conflicting demands on the use of these lands and resources have been identified and that the Commission has provided a forum for open public discussion of the various alternatives.

It has been difficult to separate use from management, especially where conflicting values and uses coincide. In some cases, we have made management recommendations. A notable example is the Commission's recommendation that exploration and production of minerals be conducted on these lands only under a permit-lease system. We have proposed the criteria for such a system. It has also been uppermost in the Commission's deliberations that management of these lands must be framed within the entire management picture of all of the lands of Alaska. The real challenge is to develop a management system that recognizes the dynamic aspects of land use over time and responds to the changing needs and values of the State and the Nation.

We welcome the opportunity to be a part of meeting this challenge through these and future recommendations to you and other leaders of the two governments, the United States of America, and the State of Alaska.

Sincerely yours,	Sincerely yours,
Joe P. Josephson State Co-Chairman Designee	Burton W. Silcock Federal Co-Chairman

Enclosure

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SENT TO YOU BY YOUR
UNITED STATES SENATOR

Ted Stevens

ALASKA

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I. INTRODUCTION

BRIEF HISTORY OF SECTION 17(d)(2)

In the four years preceding passage of the Alaska Native Claims Settlement Act, numerous bills for the settlement of Alaska Native land claims were introduced in the Congress. All failed of passage until the 91st Congress when S. 1830 passed the Senate but failed to pass the House.

Early in the first session of the 92nd Congress S. 35 was introduced in the Senate. This bill followed most of the provisions of the earlier S. 1830 with the significant addition in Section 24 of a provision establishing a Federal-State Land Use Planning Commission with some regulatory authority and review powers over proposed State and Native selections. Section 24(c) also provided for the transitional operation of the public land laws and directed the Secretary

> . . . after consultation with the Planning Commission, (to) conduct detailed studies and investigations of all unreserved public lands in Alaska . . . which are suitable under existing statutory and administrative criteria for inclusion as recreation, wilderness, wild rivers, or wildlife management areas within the National Park and the National Wildlife Refuge Systems. . . .

In the 92nd Congress H.R. 10367 was reported out by the House Interior Committee. That bill did not provide for either a land use planning commission or the withdrawal of national interest lands, although it did provide for the withdrawal of all unreserved public lands that had not been classified by the Secretary of the Interior. A proposal to extend PLO 4582 as amended, which was the last of a series of administrative actions by the Secretary of the Interior that had come to be called the "land freeze" in Alaska, was voted down in the House Committee. The Saylor-Udall amendment to H.R. 10367 was introduced on the floor of the House when the bill came up for consideration. This amendment would have provided for the designation of 50 million acres of national interest lands in addition to nearly 50 million acres of land already classified in Alaska by the Secretary of the Interior prior to the expiration of the Multiple Use and Classification Act of 1964. The amendment was rejected, and H.R. 10367 passed the House on October 20, 1971, as it was reported out by the Committee. S. 35, as an amendment to H.R. 10367, passed the Senate on November 2, 1971.

The Alaska Native Claims Settlement Act, as a compromise between the House and Senate bills reported out by the Conference Committee, included in Section 17 not only the establishment of the Federal-State Land Use Planning Commission as it is now constituted, but also in Section 17(d)(2) direction to the Secretary of the Interior to

> . . . withdraw from all forms of appropriation under the public land laws, including the mining and mineral leasing laws, and from selection under the Alaska Statehood Act, and from selection by Regional Corporations pursuant to Section 11, up to, but not to exceed, eighty million acres of unreserved public lands in the State of Alaska, including previously classified lands, which the Secretary deems are suitable for addition to or creation as units of the National Park, Forest, Wildlife Refuge, and Wild and Scenic Rivers Systems. . . .

This subsection also provides a procedure and sets time limits for terminating withdrawals, for transmitting recommendations to the Congress, and for in lieu selections by the State and Regional Corporations in the event that Congress enacts legislation setting aside these areas for public use and enjoyment.

The Act became effective December 18, 1971.*

In March 1972, the Secretary made preliminary withdrawals of lands in Alaska for this purpose. Completion of the withdrawals was to be accomplished within 9 months from the effective date of the Settlement Act. Final withdrawals of the d-2 lands were made in September 1972 by Public Land Orders 5250 through 5257, issued by the Secretary. Recommendations concerning these lands will be made by the Secretary to the Congress by December 18, 1973.

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*For a fuller explanation see the precis of the Alaska Native Claims Settlement Act contained in the appendices of this volume.

AUGUST 1972 COMMISSION RECOMMENDATIONS

When the Federal-State Land Use Planning Commission, created by authority of Section 17(a) of the Settlement Act and companion legislation passed by the Alaska State Legislature (AS 41.40.010), met for the first time on July 31, 1972. The deadline for the completion of the Section 17(d)(2) withdrawals was some 6 weeks away. The Commission immediately adopted as its first order of business recommendations on what came to be called the "d-2 lands." Presentations were made by representatives of the Federal agencies involved in the study of these lands, as well as by the Bureau of Land Management and the U.S. Geological Survey. Presentations were also made by the Commission's newly acquired Resource Planning Team, Alaska Native representatives, and agencies of the State of Alaska.

Focusing its inquiry on the areas of critical concern to State agencies and Alaska Natives, the Commission submitted its recommendations for adjustment of the final d-2 withdrawals on August 16, 1972. Most of the recommendations of the Commission representing the Commission's analysis of the critical areas identified by State agencies were adopted by the Secretary. Of the areas tentatively identified in March 1972, about 14 million acres were placed in d-1 withdrawals or in State or Native land selection areas. A slightly smaller total acreage was added to the initial d-2 withdrawals, thus holding the overall total to close to the 80-million-acre limitation.

The Commission also unanimously recommended in its August 1972 action that:

1. the Department of the Interior give meticulous examination to the latest written statements and requests by Native Regional Corporations presented to the Commission on August 9-10 (transmitted to the Department on August 15, 1972).

2. the Department accord priority to regional and village deficiency needs in every instance over d-1 or d-2 withdrawals.

3. all orders withdrawing d-2 lands contain specific language indicating that use of the lands for subsistence purposes and hunting and fishing for recreation be permitted for the duration of the withdrawal.

SOURCES OF INFORMATION

At its inception in November 1971, the Resource Planning Team began assembling data on the lands of Alaska. When the Federal-State Land Use Planning Commission became functional, it directed the Team to prepare a statewide inventory of resources of Alaska. Always, the Commission has been explicit in its belief that an adequate data base is the sine qua non of sound planning.

As the Commission turned to its work under Section 17(d)(2) of the Alaska Native Claims Settlement Act, it called on the Team to give highest priority to the resource inventory of d-2 lands. The Team responded with comprehensive narrative reports describing the resources of the respective areas. Both the Advisory Committee and the Commission have utilized these reports in their review.

The inventory by the Team has also taken graphic form. Maps, drawings, photographs, and overlays have been considered by the Advisory Committee, the Commission, and the staff.

Public hearings by the Commission have produced valuable information incorporated in the Commission's findings. The effort of the Commission to secure public testimony is without precedent. Commissioners traveled to urban and remote rural locations in Alaska, and took testimony at hearings in San Francisco, Washington, D.C., Denver, and Seattle. Moreover, numerous written comments have been received and inserted into the hearings record. Videotape was employed at the public hearings. In addition, the Commission has supplied to the Secretary of the Interior written, verbatim transcripts of the public hearings and has used the transcripts also in its own deliberations.

Ordinarily, public hearings are conducted upon specific agency proposals to which a community is invited to make response. Here, the Commission conducted hearings without offering outlines of even tentative decisions by agencies. The lack of specific agency proposals was a circumstance beyond the Commission's control. Constraints within the Department of the Interior precluded its constituent agencies from presenting specific proposals in public prior to Secretarial determinations.

In some respects, this procedure may have been detrimental to the hearing process. Certainly the procedure surprised some witnesses accustomed to responding to agency initiatives. In some locations, one sensed that the solicitation of public testimony in the absence of agency proposals seemed unsettling and confusing in its effects upon the populace.

On the other hand, the absence of agency proposals at the time of hearings helped to assure objectivity in the conduct of the hearings and may have produced clearer statements of public attitudes than a hearing which invited only responses to known government proposals. (In any event, the Commission intends to conduct further hearings in the light of specific proposals to be sent by the Secretary of the Interior to the Congress later this year. Thereafter, the Commission will report directly to the Congress.)

In the absence of a specific agency proposal, the Commission intensified its own efforts to provide necessary background and focus upon the issues for which the hearings were provided. First, the Commission prepared and circulated widely its publication containing the schedule of hearings, agency comments, general descriptions of the areas under scrutiny, the purposes of the hearings, and a list of questions on which public comment was requested. A copy of the publication was mailed to all registered voters in the State and widely distributed outside Alaska.

The Resource Planning Team prepared brochures on the respective d-2 areas outlining in brief the material contained in the comprehensive narrative reports mentioned above. The brochures were available to the public, and copies of brochures were distributed to those present at public hearings.

Typically, public hearings began with an explanation of their purpose--the identification of land uses which witnesses might feel should be permitted or prohibited, regulated or unregulated, in the d-2 areas. Usually, the presiding officer then outlined the timetable facing the Commission and the Secretary, i.e., the Commission's intention to report to the Secretary by early August and the statutory requirement that the Secretary submit any legislation recommending permanent reservation of the lands by December 18, 1973. The public was then advised that the Congress would have 5 years to determine if proposals for permanent reservation should be approved.

While agency representatives at the hearings were there neither as advocates nor as witnesses, their presence was made known to the public. The agency representatives answered questions posed at the hearings and, in their own judgment, intervened to correct misconceptions about agency policy or practice.

After the hearings, the Commission spent several full weeks in deliberation at Anchorage discussing the recommendations which follow. One week was devoted to the work of three subcommittees established to give in-depth consideration to particular areas of special importance; in the other 2 weeks of deliberations the Commission sessions were plenary.

In the plenary sessions, the Commission met in public, examined narrative and graphic materials of the Resource Planning Team, questioned Resource Planning Team personnel, received comments from its core staff, reviewed pertinent highlights from the hearings records, and discussed the issues treated below.

The Commission's Advisory Committee made important contributions to the development of the Commission's recommendations. The Advisory Committee met for approximately 2 weeks; and its last meeting was timed to provide advice to the Commission, then meeting in its final plenary session on the national interest study areas.

Finally, it is noted that an important element in the process of formulating recommendations has been the personal experience in Alaska of the Commissioners themselves. In 1972, the Commission conducted several field trips for the purpose of personal observation. The 1973 d-2 hearings also permitted inspection in the field. Beyond that, each Commissioner has brought years of Alaska experience to the discussions on which the recommendations which follow are predicated.

SUMMARY OF RECOMMENDATIONS

One of the most massive and dynamic land redistributions in the history of the United States is now in process in Alaska--a land of extremes, geographic, social, and economic in character. Selection rights granted to the State of Alaska at statehood and to Alaska Natives in settlement of their land claims are guides given by Congress for this land redistribution.

The Alaska Native Claims Settlement Act also directs the Secretary of the Interior to study and identify lands in Alaska for possible additions to the National Forests, Parks, Wildlife Refuges, and Wild and Scenic Rivers Systems.

The implications for the Nation, the State, and Alaska's Natives are enormous. The Nation has recognized that Alaska is a place where environmental quality can be maintained, and that areas with unique wildlife and scenic grandeur may be set aside as a heritage for future generations. At the same time, the Nation is concerned with finding and developing new energy resources and other mineral and timber resources to meet national needs and to reduce the Nation's dependence on foreign suppliers.

The State of Alaska shares these national concerns over energy and other resources and related environmental issues. Also of immediate State concern--and national importance--is the economic viability of the State and the well-being of its people.

The third set of interests--those of Alaska Natives--involves both the Nation and the State. The entire culture and social structure of Alaska Natives is intimately linked to traditional land use patterns. While desiring to maintain their unique relationship with the land, Alaska Natives may also seek to move into the broader economy of the State and Nation.

As a result of juxtaposing National, State, and Native interests in these lands and the other lands of Alaska, two difficult challenges have been faced by the Commission in arriving at its recommendations. The first is the possibility of conflict between preserving lands of unique wildlife and scenic values and developing resources. The Commission has had to weigh that possibility wherever scenic values and mineral values coincide. Thus, the Commission has sought to balance competing values, taking into account the probable effects of its recommendations upon the economic and social structure of Alaska. The second challenge is the need to protect significant waterfowl and wildlife habitat at the same time that subsistence needs of Alaska Natives and other rural Alaskans are met through the continued taking of fish, game, and other renewable resources.

Within the framework of these major concerns, the Federal-State Land Use Planning Commission makes its recommendations for the use of approximately 80 million acres withdrawn by the Secretary under Section 17(d)(2) of the Alaska Native Claims Settlement Act.

The land use recommendations of the Commission fall into several major categories. Some of the lands should have minimal use in order to preserve unique natural areas.

Some of the lands are natural waterfowl, wildlife, or fisheries habitats of major importance. Some of the lands have major importance for mineral development. Some of the lands lend themselves to a variety of uses.

In all of its judgments the Commission has positioned the d-2 lands within the framework of all of Alaska and has considered the size, location, and relationship of these lands to other lands in Alaska.

In certain recommended cases, additional study is needed. For example, the Commission has generally recommended statewide analysis of transportation needs, further research on areas nominated for classification as wild and scenic rivers under the Wild and Scenic Rivers Act, and additional study on the classification of lands for scientific research and natural areas.

Other general recommendations which serve as the foundation for specific use recommendations are set out, with supportive findings, in Section II of this report. Recommendations of allowable uses and primary values to be protected in each of 24 groupings of the d-2 withdrawal areas are set out in Section III of this report.

An overall summary of these recommendations identifying primary values in 26 d-2 areas totaling over 78 million acres is set out below:

Waterfowl Habitat

Along the Yukon River and its tributaries and in some of the northern coastal areas, approximately 13,915,000 acres have been recommended as prime waterfowl habitat.

Fish and Wildlife Habitat and Utilization

Areas critical for a part of the life cycle of fish, sea birds, sea mammals, and other wildlife have been identified throughout the d-2 areas. For these purposes 4,040,000 acres have been recommended as critical areas. These are chiefly island and coastal areas and the Lake Iliamna watershed.

Recreation Use and Unique Scenic and Natural Features

Some 22,469,000 acres have been recognized for a combination of their unique scenic and natural values. Intensive use of these areas is not recommended. Although scattered throughout Alaska, these areas have been identified chiefly in the Central Brooks Range, in the Mt. McKinley and Katmai areas, and in the Chugach-Wrangell Mountains. Lands near population and tourist centers--for example the Lake Clark, Harding Icefield, and College Fiord areas--have been identified for more detailed planning and control to accommodate increasing recreational use, while preserving environmental values.

Study Areas for Antiquity and Other Scientific Values

Principally located in northwestern Alaska, where early man came into Alaska from Asia over the Bering land bridge, there are many archaeological sites worthy of preservation. There are other areas of historical, paleontological, and other values where scientific study can be conducted. For these purposes 379,000 acres have been recommended.

Exploration and Extraction of Mineral Resources

In all of its recommendations the Commission has specified that exploration and development should be conducted under a permit and lease system. Exploration and extraction of mineral resources are recommended allowable uses for 60,800,000 acres of the d-2 withdrawals, overlapping in many instances areas where other uses are of primary value. Of these, 910,000 acres are recommended solely for exploration for inventory purposes and for prohibition of the production of mineral resources. Another approximately 13,800,000 acres are identified where exploration and extraction are allowed, but only under careful regulation. Also included in the total are 294,000 acres where only geothermal exploration and possible production are recommended, and 2,681,000 acres where only oil and gas (and no other mineral) exploration or production is to be permitted.

Hunting, Fishing, and Taking of Other Renewable Resources

All of the lands in the d-2 withdrawals are to remain open to hunting and fishing, with the exception of approximately 3 million acres of high scenic and natural value chiefly in the Central Brooks, Wrangell-Chugach, and Mt. McKinley areas, where all types of hunting should be prohibited. An additional 2 million acres in the Central Brooks, Katmai, and Imuruk Basin areas where hunting is restricted to that necessary to meet subsistence needs were identified.

Variety of Uses

Over 37 million acres (37,689,000) have been recommended for a variety of uses. Such lands are those where the Commission has found no single overriding use deserving of more than baseline protection.

In many of the units under consideration, present and projected uses are of low intensity and narrow in scope. This fact, in most cases, coupled with natural or assigned spatial separation or the temporal separation of competing uses will assure compatibility of the uses recommended. In other cases, compatibility of uses is assured by existing and proposed regulation and management to protect primary values.

In the course of the Commission's work, it has become increasingly clear that the major long-range problem is the management of the lands in Alaska. Permanent withdrawals for specific uses under existing land management systems present a relatively simple task. The development of a management system that recognizes the dynamic aspects of land use over time and responds to the changing needs and values of the State and Nation is the real challenge. The Commission makes some necessary management recommendations at this time. In the early months of 1974, it will report more fully on management questions. From this examination of management needs, it is also contemplated that proposals for legislation to both the Federal and State governments will follow.

SUMMARY OF SPECIFIC RECOMMENDATIONS AFFECTING FREE-FLOWING STREAMS IN D-2 UNITS

NOATAK-KOBUK-SELAWIK

All developmental uses, including mining and oil and gas production, or other uses which could adversely affect the environment should be prohibited in a corridor area on either side of the Noatak River from Cutler River to Twelvemile Creek.

None of the four hydroelectric projects affecting these units should be constructed.

UPPER YUKON

No developmental uses, including mining and oil and gas production, or other uses which would further alter the environment should be permitted within a corridor area along the Yukon River. The Woodchopper Dam hydroelectric project should not be built.

That portion of the Charley River which flows through the adjoining d-1 withdrawal should be protected in a manner similar to that recommended for the Upper Yukon area.

YUKON FLATS

No hydroelectric project which would adversely affect waterfowl habitat should be constructed.

INNOKO FLATS, KAIYUH SLOUGH, KANUTI FLATS, KOYUKUK FLATS, NOWITNA

Development of any of the three proposed hydroelectric and flood control projects impacting these units should not be permitted at this time.

ANIAKCHAK CRATER

The Aniakchak River should be used for those nonintensive recreational activities that do not have an adverse impact on the environment.

LAKE CLARK-ILIAMNA AND KATMAI

The inventoried hydroelectric powersite at Twin and Lackbuna Lakes should be studied for possible development. Other inventoried sites do not warrant further investigation at this time.

WRANGELL-CHUGACH MOUNTAINS

Because of potential damage to the Copper River salmon fishery, Wood Canyon does not warrant further investigation as a hydroelectric site.

II. GENERAL FINDINGS AND RECOMMENDATIONS

RESOURCES TO MEET SUBSISTENCE NEEDS

Findings

Hearings in rural Alaska confirmed the need to allow continued subsistence hunting, fishing, trapping, greens gathering, berrypicking, and wood gathering for shelter and fuel. The often eloquent testimony of the Native was buttressed vividly by the conditions in which many of the rural people of Alaska live. The factual statistics related to employment, education, living conditions, and mental and physical health of Alaska rural Natives speak for themselves.* Lack of employment opportunities forces the Native, as well as some other Alaskans, to depend on food gathering for a major part of his livelihood. It is estimated that some 60 to 70 thousand Alaskans, mostly Native, use fish, game, berries, and other renewable resources to meet subsistence needs. These activities that sustain life have roots which go much deeper than the satisfaction of physical need. The Alaska Native, particularly, feels these activities as an integral part of his culture.

Although the Alaska Native Claims Settlement Act provides for the extinguishment of "aboriginal" hunting and fishing rights, the Commission understands that Congress is looking to the Secretary of the Interior and to the State of Alaska to provide for the continued taking of fish, game, and other renewable resources for the purpose of meeting subsistence needs.

One option is for the Secretary of the Interior to withdraw lands in Federal ownership for the purpose of providing lands from which these resources may be taken by Alaska Natives for subsistence needs and to limit entry on such lands to only Alaska Natives. This would materially reduce deficiency lands from which Alaska Natives may make selections under the Settlement Act. It could alter other Federal purposes to be served by the remaining Federal lands in Alaska. It could also prevent many Alaska residents who are not Alaska Natives but who also rely for their livelihood on these resources, from access to the resources; and an immediate conflict with users of these resources for sport and commercial purposes could be created.

---

* See Federal Field Committee for Development Planning in Alaska. Alaska Natives and the Land, Anchorage, Alaska, 1968.

The other option is that the State of Alaska, under its authority to manage resident game and fish resources for all of the people of the State: define subsistence needs and uses for these resources on continuum; and give a preference to the taking of the resources to meet subsistence needs where conflicts arise in the future with the taking of such resources for sport or commercial purposes.

Affecting both options is the possibility that increasing rural populations and technological changes may seriously reduce the stocks of fish, game, and other resources available to meet projected needs for sport, commercial, and subsistence purposes. Conversely, social, economic, and technological changes are gradually reducing the extent to which Alaska's rural population depends on subsistence for its livelihood. It is difficult to predict the extent of these trends.

Subsistence activity ranges on a broad spectrum of activities from direct use of the resource by the family of the provider to some commercial activities and the taking of resources as a part of the individual's cultural heritage. It is for this reason that flexibility to define subsistence needs on a continuum is imperative.

The Commission finds that the needs of all people will best be served not by withdrawing additional lands solely for the purpose of taking resources to meet subsistence needs, but by assuring that such subsistence activities shall continue on the d-2 lands under consideration (with some specific exceptions), as well as on all other Federal and State lands within Alaska. This will result in a reduced possibility of racial divisiveness and will provide a more flexible means by which such resources can be managed to meet the needs of all of the people.

Recommendation

UNLESS PROHIBITED in the recommendations which follow, hunting, fishing, trapping, berrypicking, timber cutting for local consumption for fuel and home building, and other subsistence activities should be permitted. Where a conflict arises between the taking of such resources from the land for sport or commercial purposes or for subsistence need, preference should be given to the taking for subsistence need.

DEVELOPMENT OF MINERAL RESOURCES

Findings

Alaska lands have known and potential mineral resources of national and international significance. Some of the most significant copper potential found anywhere in the world is in parts of the d-2 lands under consideration. In many instances, mineral resources occur in areas of unique natural beauty having outstanding scenic and wildlife values. In these cases mineral exploration and development must be conducted in a manner which will prevent or minimize any adverse environmental effects. The Commission finds that it is in the national interest, as well as in the interest of the State, to develop these resources at a time and under conditions that will yield maximum benefit to the State and Nation, consistent with environmental considerations.

Exploration and production of oil, gas, and other leasable minerals are governed by the Mineral Leasing Act of 1920, as amended, and entry upon lands for the purpose of seismic and other investigatory activities can be regulated by permit.

All sales or grants of land owned by the State of Alaska must reserve the mineral estate, and the State may only lease the mineral rights. The State Department of Natural Resources has also adopted detailed regulations controlling the use and entry on State lands for purposes such as mineral exploration with general stipulations minimizing surface damage and disruption of water courses. A permit is required for activities such as the use of explosives and heavy equipment.

The Commission recognizes that for 5 years from the date of the Secretary's recommendations on d-2 lands to be included in National Park, Forest, Wildlife Refuge, and Wild and Scenic Rivers Systems, or until Congress acts within that period, the lands so recommended will not be open to exploration or extraction of metalliferous minerals. The Commission also recognizes that locations for metalliferous minerals are now permitted on d-1 lands, and that the presently withdrawn d-2 areas are also within d-1 withdrawals for the purpose of classification. Thus, d-2 lands not permanently reserved would be covered by d-1 withdrawals.

In the recommendations which follow, the Commission has examined in detail the d-2 areas where high conflict is presented between allowable uses and has delineated specifically some areas in which no exploration for or extraction of mineral resources should occur. In the remaining portions of the d-2 areas under consideration, the Commission believes that protection of other values and the exploration for and the extraction of mineral resources on Federal land can be achieved only with great difficulty under the General Mining Law of 1872, as amended. However, it is a finding of the Commission that in places where mineral activities are permitted in the specific recommendations, protection of other values and development of mineral resources can be achieved in a compatible manner under a proper permit and lease system for metalliferous minerals.

Recommendations

UNLESS PROHIBITED, exploration and extraction of locatable minerals should be allowed in each of the d-2 units under a permit and lease system that requires mineral exploration and production be conducted in a manner which will prevent or substantially reduce the adverse environmental consequences of such activity.

UNLESS PROHIBITED, exploration and production of oil, gas, and other so-called leasable minerals should be allowed under existing laws and regulations.

The Commission will consider and submit criteria for a permit and lease system. The outline set out below served as a basis for discussion at a seminar sponsored by the Commission on revision of mining laws. The seminar was attended by miners, environmentalists, lawyers, economists, land planners, and public administrators. In light of comments received at the seminar, the proposal will be revised by staff and submitted to the Commission for review.

Outline of a Permit and Lease System for Mineral Exploration and Extraction

Introduction

The phrase "exploration by permit and extraction by lease" means different things to different people. Accordingly, the purpose here is to provide an outline of what the Commission is proposing when these words are used in specific area recommendations. It should be emphasized at the outset that the following findings and recommendations are not, nor are they intended to be, a comprehensive proposal for the disposition of minerals located in lands now withdrawn pursuant to Section 17(d)(2) of the Alaska Native Claims Settlement Act. It is expected that such a proposal or one pertaining to all unappropriated Federal lands in Alaska will be forthcoming at a later date. For the present, we believe that the following findings and recommendations will suffice to indicate: (1) the reasons for our conclusion that certain revisions in the present mining and mineral leasing laws are necessary; and (2) the general meaning which we are imputing to the recommendation that minerals development in many areas of Alaska take place pursuant to a permit and lease system.

Statement of Policy

The recommendations made below are premised on certain underlying principles which, we believe, should be stated explicitly. Briefly, they are as follows:

1. The laws relating to the disposal of mineral resources located in the public domain should:

    a. Require that mineral exploration and production be conducted in a manner which will prevent or substantially reduce the adverse environmental consequences of such activity.

    b. Encourage the development of mineral resources in a manner which is compatible with the use of nearby lands for other purposes and will permit the subsequent use of mined-out areas for purposes unrelated to mineral production.

    c. Foster, promote, and encourage the exploration for and production of the mineral resources of the United States.

    d. Ensure the public a fair return on the disposition of mineral resources extracted from the public lands of the United States.

    e. Give those engaged in mineral exploration and extraction a reasonable opportunity to earn a fair return on their investments, with due recognition being given to the financial risks involved.

    f. Prevent waste and promote the conservation of domestic mineral deposits.

    g. Promote competition within the minerals extraction industry.

2. There are public lands in Alaska which, because of their unique scenic, wildlife, or other values, should be closed to mineral exploration and extraction.

Findings

The purpose of this section is to specify some of the reasons which have led the Commission to conclude that certain major revisions in the present mineral disposal laws are necessary. These reasons, which are presented in the form of findings, are as follows:

1. The General Mining Law of 1872 effects no means by which the government can effectively control the environmental impact of mining activity.

2. Mining claims long since dormant or abandoned remain as clouds-on-title because the means for invalidating them are cumbersome and time-consuming.

3. Because of inadequacies in the recordation system for mining claims, the location of such claims is often unknown or uncertain.

4. Using the patent acquisition procedures provided in the General Mining Law, many individuals whose primary interest is not in mineral development have been able to acquire fee title to the lands encompassed within their claims.

5. The ability to acquire fee title to lands which are the subject of a mining claim, as opposed to the acquisition of title to the mineral deposit itself, is not a necessary concomitant of efficient minerals development. Moreover, the per-acre charge assessed for the acquisition of fee title to placer and lode claims does not give the public a fair return on lands taken out of the public domain.

6. The present mining laws are inadequate in that there is no certainty of land tenure prior to meeting requirements for the valid discovery of a deposit. This weakness tends to discourage the large scale expenditures involved in modern day mining activity and often leads to the hasty and imprudent development of claims. Moreover, there are varying administrative and judicial standards for what constitutes a valid discovery.

7. The present mining laws make inadequate provision for the use of adjacent lands needed to develop a claim.

8. There is no requirement in the present mining laws that private industry provide resource information to government land managers on a confidential basis. Such a requirement is contained in the mineral leasing laws. As a result, government agencies have been able to obtain much information of value in making land use and classification decisions without jeopardizing the proprietary interests of private industry.

9. The present mining laws create confusing distinctions between placer and lode claims. Such distinctions appear to have no substantive validity.

10. There is no mechanism in the present mining laws which will allow the public to derive a fair return from the extraction of minerals located in the public lands.

11. Despite the fact that State mining laws vary greatly and are often obsolete, State requirements are read into Federal law when there is no apparent conflict.

12. Past experience indicates that the laws for disposing of leasable and salable minerals from public lands generally meet the criteria, including the capacity to protect against environmental degradation, which are referred to in the previous section dealing with policy objectives. For the most part, these laws delegate the responsibility for environmental protection to the Secretary of the Interior. In turn, he requires the inclusion in permits, leases, and sales contracts of those provisions which he deems necessary. The primary advantage of such a delegation to the Secretary is that he can then take cognizance of differing circumstances and physical conditions. However, in certain instances, policy questions which Congress is best equipped to answer are left to administrative determination.

13. Confusion continues to exist about whether certain minerals should be disposed of by means of location, lease, or sale.

14. Hard rock minerals located in certain Federal lands are disposed of pursuant to a lease, and not a location, system. Past experience indicates that the disposition of such minerals by use of the former system has not retarded exploration or development.

15. The economic efficiency of the claims location system suffers notably as a consequence of the small scale exploration which results therefrom. This inefficiency impacts with special severity in Alaska, which is in great need of regional economic development. The promulgation of a more efficient system would stimulate economic activity and create new jobs, especially in rural Alaska where most hard rock mineral deposits are located.

16. Alaska receives 90 percent of the government share of revenues derived from the disposal of leasable minerals located in the Federal public lands of this State. There is no similar requirement in the general mining laws, which also do not require the payment of a productive royalty.

17. The unrestricted right to stake mining claims on the public domain makes effective land use planning difficult and sometimes prevents the highest and best use of public lands. This results from the fact that location is on a "first come--first served" basis, thus, precluding the opportunity for proper planning unless lands have been previously classified.

18. While disagreeing on the type of minerals disposal system which should be adopted, all members of the Public Land Law Review Commission in their report entitled One Third of the Nation's Land advocated certain fundamental changes in the laws governing hard rock minerals exploration and development.

19. Judicial and administrative decisions have consistently recognized the right of access to a mining claim as a necessary incident of the right to locate such claims on the public domain.

20. Each of the methods for exacting economic rent from minerals development--the cash bonus, production royalties, and annual rent--have certain advantages and disadvantages as a matter of economic policy. The present mineral leasing system generally appears to strike a reasonable balance between the various competing factors. Thus, this system tends to permit entry into the mineral extraction industry while insuring that subsequent royalties and rents, in themselves, will not substantially retard development.

21. Past experience indicates that, in contrast to intensive geophysical exploration, geological reconnaissance (including geologic mapping, the collection of surface rock samples, and other such activities) does not significantly affect the ecological aspects of an area. In fact, the impact appears to be no greater than that of such activities as hunting and camping.

22. Those minerals which are currently classified as leasable tend to occur in pools or horizontal beds. Locatable minerals most often occur in the form of lodes which, though they may be found in the same general area or belt, are usually separate and distinct geologic formations. For this reason, it is not likely that a competitive bidding system based on known geologic structures or producing mines in adjacent areas would work efficiently or equitably with respect to locatable minerals.

23. Many persons engage in rock collecting for hobby purposes on the public domain. In Alaska, the environmental effects of such activity have been light.

24. Under Alaska law, the holder of a production lease or prospecting site which is forfeited or canceled is precluded for a fixed period from reacquiring an interest in the lands involved. This prohibition has helped to foster compliance with relevant legal requirements and to avoid speculation and preclusive holdings.

25. With certain exceptions, Alaska law provides for the acquisition of mineral rights pursuant to a lease system. In addition, such law permits the acquisition of the exclusive right to prospect on a particular site for a fixed period and requires that mineral exploration and extraction on offshore lands take place pursuant to a permit and lease system. While this law has not been fully tested by intensive development, it generally appears designed to achieve the policy objectives set out in the previous section. Accordingly, certain concepts embodied in State law (as well as concepts from certain Federal laws, such as the Mineral Leasing Act of 1920) have been incorporated, where appropriate, into the permit and lease system described below.

Recommendations

1. Exploration for minerals including salable minerals, should take place pursuant to a permit system with the following basic characteristics:*

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* This system would not apply to geological reconnaissance work, including geologic mapping, the collection of surface rock samples, and other such activities. Such work would be on a nonexclusive basis; and, in contradistinction to the exploration permit described here, would not carry with it the automatic right to produce any minerals which are found. Rather, a prospector would be required to apply for an exploration permit or production lease pursuant to the procedures described in this outline. However, if the lands in question are open to exploration and extraction, and if the putative developer is otherwise qualified and there is no requirement for competitive bidding, a permit or lease containing the conditions outlined here should be issued. The permit and lease system described in this outline would also not apply to the casual prospector who collects rock samples for hobby purposes on unappropriated lands.

a. Separate permits should be issued for each of the three classes of minerals. If prospecting methods are compatible, exploration for locatable, leasable, and salable minerals could be conducted on the same land by different persons or corporations.

b. The permit should authorize exploration on a sufficiently large block of land to permit the efficient use of modern prospecting and exploration techniques.

c. The rental charge for the exploration permit should be sufficiently high to promote immediate exploration by discouraging the tendency to speculate on lands held.

d. For the reasons outlined in finding 22 above, permits authorizing exploration for locatable minerals should be issued on a noncompetitive basis to the first qualified person who applies. Exploration permits for leasable minerals should also be issued on a noncompetitive basis, except in the following instances:

(1) If the lands involved are within a known geologic structure from which minerals are presently being extracted.

(2) If the land included within the permit was previously the subject of a lease or permit which has been relinquished or forfeited.

(3) If past activity or general knowledge suggests reasonably good prospects for success.

In these instances, competitive bidding for exploration permits and productive leases (see 2.c. below) should be on a cash bonus basis.

e. The right to explore should connote the right to take from the land only that quantity of a mineral which is reasonably necessary for careful analysis of the area involved in accordance with procedures customarily utilized for such purposes.

f. The duration of the permit should be fixed with a view toward permitting thorough exploration of the land involved while discouraging speculation.

g. It is envisioned that whichever approach is adopted would be a substitute for the assessment work requirement contained in the present mining laws.

h. The permit (and any subsequent productive lease) should require annual filing of geological and prospecting information with the U.S. Geological Survey. Such information should be kept confidential for the duration of the permit or any subsequent development lease, whichever is longer. Information should be provided on the same basis to appropriate State agencies to assist in land planning, in analysis of any adjoining State land, and for other purposes.

i. Permits should be issued in accordance with a uniform system for describing land areas.

j. To insure that public lands will not be tied up for an inordinate period of time, the permit should require that a specific percentage of the total lands involved must be returned to the public domain at certain intervals unless application has been made for a development lease. (An alternative means for accomplishing the same objective would be to require the payment of increased annual rentals pursuant to a graduated scale.)

k. The permit should not contain an automatic right of renewal. Rather, renewal should be dependent upon a showing of due diligence in conducting exploration work, an intervening natural disaster which prevented such activity, or other circumstances which, in the opinion of the Secretary of the Interior, justifies renewal. Such decisions by the Secretary should be based on criteria promulgated previously in published regulations.

l. There should be no limit on the number of permits which could be held by an individual or firm at a particular time.

m. The permit should contain conditions for environmental protection. Such conditions would vary from permit to permit depending upon the type of mineral, the physical characteristics of the area in which it is located, and other such factors. In addition, a requirement should be included that land involved in exploration work be restored to its original or other appropriate condition. Such restoration requirements should consider past and possible future uses of the area, the surrounding topography, and the socioeconomic conditions which pertain in the area. Stipulations should be promulgated by the Bureau of Land Management in conjunction with other affected agencies. To avoid uncertainty, all conditions and requirements respecting environmental protection and rehabilitation should be incorporated into the permit when it is initially issued.

n. A bonding requirement should be included in the permit to insure the performance of provisions relating to environmental protection, rehabilitation, and other such specifications.

o. The permit should give the holder the exclusive right to explore for the minerals specified therein while it is in effect.

p. The permit should carry with it the exclusive right to develop and produce minerals found as a result of exploration; provided that (1) it can be shown that such minerals exist in sufficient grade and quantity to justify the expenditure of money and labor by an ordinarily prudent man who has concluded that such expenditures are reasonably likely to result in the development of a mine or well capable of producing minerals in paying quantities, and (2) the paying quantities be determined in relation to reasonable price projections for the mineral during the duration of the lease.

q. Persons who do not obtain a permit prior to commencing exploration work should be subject to criminal prosecution.

2. With the exception of salable minerals, which should continue to be disposed of pursuant to existing law, the mineral resources of the public domain should be disposed of pursuant to a lease system in which the Federal government retains title to subject lands. Such a system should have the following basic characteristics:

a. The decision to open lands to lease (or to exploration) should be made by the Secretary of the Interior. Leases or permits covering lands, the surface of which is under the jurisdiction of a Federal agency other than the Department of the Interior, should be issued only upon the consent of that agency and upon such conditions as that agency deems appropriate.

b. Where the Secretary determines that different extraction operations will not interfere with each other, the issuance of a lease for one class of minerals should not preclude the issuance of leases covering other minerals located in the same lands.

c. Leases should be issued either as the result of the exercise of his right to lease by the holder of an exploration permit or if a permit is not involved on a competitive or noncompetitive basis in accordance with the standards provided in Section 1.d. above.

d. To provide certainty, stipulations concerning environmental protection and the rehabilitation of land once production has ended should be included in the initial lease in accordance with the conditions referred to in recommendation 1.m. above.

e. Leased areas should vary in size to take cognizance of topography, the type of mineral involved, and other relevant factors.

f. The holder of a lease should be required to pay annual rent in an amount large enough to discourage speculation and preclusive holdings, while not retarding mineral development by those genuinely interested in engaging in such activity.

g. A fixed percentage of gross production royalty* for payment to the government should be established in each lease at the outset. This royalty, which may vary from mineral to mineral, should apply to all minerals not classified as salable. The government share of such royalties should be divided between the Federal government and the State of Alaska in accordance with the formula now applicable to leasable minerals located in the public domain.

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* It has been envisioned that this assessment would operate essentially as it does currently in the oil and gas industry. Thus, the fundamental concept is that the royalty should be computed in relation to the gross value of the unprocessed mineral at the point of extraction. It is likely, however, that the production stage at which this measure is applied will vary slightly from mineral to mineral depending upon customary industry practices.

h. Each lease should require the posting of a bond to insure the performance of stipulations relating to environmental protection, rehabilitation, and other such conditions.

i. The lease should carry with it the right to use free of charge (aside from the annual rent referred to in 2.f. above), as much of the surface of the leased area as may be reasonably required for the actual extraction and removal of the mineral or minerals subject to the lease. If no conflicting third party interests are involved, the lease should also afford the lessee the opportunity to lease adjoining lands for purposes reasonably related to mineral extraction and development. Leases on adjoining lands should be let upon the payment of fair market rental and pursuant to conditions prescribed by the Secretary of the Interior to insure environmental protection and rehabilitation.

j. A production lease should be issued for a fixed period of sufficient duration to permit the prudent and full extraction of leased resources. The lessee should have the right to renew the lease for an additional period if he can show: (1) that past production has been on a profitmaking basis; or (2) that the leased area is part of a unit plan for mineral production which has been approved by the Secretary of the Interior; or (3) that for good cause shown, such as a natural disaster, it was not possible to produce minerals in paying quantities from the area involved within the initial period.

k. Those terms of the lease which relate to environmental protection and financial matters should be subject to readjustment at the end of the initial period; provided, however, that any such readjustment should not be so onerous as to preclude the possibility of further development at a profit.

    1. Production leases (and exploration permits) should be subject to forfeiture upon a showing by the Secretary of the Interior of nonperformance of one or more of the conditions or requirements specified in the lease (or permit). Such forfeiture should take place only after a duly noticed hearing has been held pursuant to relevant law and regulations. The holder of a lease or permit which is forfeited, canceled, abandoned, or otherwise relinquished should be prohibited from reacquiring rights to the land involved for a fixed period of, say, 1 year.

3. In order to insure the evenhanded treatment of affected parties, to provide sufficient guidance to government administrators and the public, and to insure the proper implementation of congressional intent concerning such major concerns as environmental protection and rehabilitation, Congress should carefully define the parameters of administrative discretion with respect to the primary elements of a permit-lease and a permit-sale system (for salable minerals). This recommendation is premised on the Commission's belief that while a certain degree of flexibility is essential to the proper operation of these systems, matters such as environmental protection and rehabilitation involve major policy questions that should not be left to administrative determination.

4. All claims staked under the general mining laws prior to the enactment of amendatory legislation should remain subject to the provisions of those laws, provided that such claims are recorded with the Department of the Interior not more than 1 year after the issuance by the Secretary of regulations prescribing the manner for recording. Any claim not so recorded should be considered null and void. However, recordation should not render valid any claim which is invalid on the date of enactment of new legislation or which becomes invalid thereafter. The holder of a claim should have the option of obtaining a lease pursuant to the system described above if he can show that his claim meets the criteria specified in section 1.p. and elsewhere herein.

5. In situations where the Federal government retains ownership of the subsurface mineral estate after surface lands have been conveyed to a third party, the surface owner should be afforded the opportunity to purchase the subsurface estate at fair market value. In situations where the subsurface is the subject of a valid mining claim, Federal law should give the surface owner the right to seek monetary or other appropriate remedies for damages which are precipitated by development of the claim, provided that the provision of such remedies does not impair the vested rights of the subsurface owner.

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6. The holders of permits and leases should be required to record such documents with appropriate State officials. With this exception, Federal law should govern all aspects of mineral exploration and development on lands owned by the United States. State and local laws pertaining to environmental protection, health, safety, the police power, and other such matters which have traditionally been under State jurisdiction should not be preempted.

7. To avoid continuing confusion, Congress should specify those minerals which should be disposed of pursuant to lease, on the one hand, or sales contract, on the other.

8. Before determining that an area should be opened to mineral exploration or, if an exploration permit is not involved, to extraction pursuant to lease, the Secretary of the Interior, with the concurrence of the head of the agency responsible for surface management if other than Interior, should ascertain whether reasonable access to the area can be provided without causing significant environmental degradation. If so, the authorized methods of transportation, access routes, and other such conditions should be specified in the permit or lease and access guaranteed for their duration. If an economically feasible and environmentally safe route cannot be found, the affected area should not be opened to development. Unless the chosen route is or becomes a public road or trail, the developer should be required to rehabilitate affected lands at the expiration of his permit or lease.

TRANSPORTATION

Findings

Alaska's transportation system is in its infancy. At the same time, the geographic considerations, long distances involved, and sparse population create a unique set of transportation needs. These needs cannot be met by haphazard development of transportation facilities. A genuine multimodal transportation system is essential if the transportation goals of the State, as it develops, are to be met.

The Commission finds that land use should determine transportation patterns, rather than the reverse. The Commission strongly feels that any transportation facilities that are developed must be designed in a manner which minimizes the adverse impact of the facility on the environment; and further, that residents of areas to be affected by such facilities should have full opportunity to participate in transportation decisions through a proper system of public hearings.

Hence, the Commission finds that it is impossible to identify specific major transportation corridors through the d-2 lands under consideration at this time. The Commission, however, recognizes that provisions for future access should be made in accordance with the development of an intermodal transportation system.

Recommendations

A few specific recommendations have been made in some of the d-2 areas for local access to or through the units under consideration, and these recommendations are specifically stated hereafter. In all other respects, the Commission recommends that access to or through all d-2 areas should be allowed. Further, it is recommended that provision be made in the final classification of the d-2 withdrawals for the identification of a transportation corridor or corridors at a later time. No such corridors should be designated with specificity unless they are found to be in conformance with a statewide transportation plan pursuant to which all possible modes of transportation have been evaluated.

It is also recommended that transportation facilities be constructed only after a finding is made that such facilities can be constructed in a manner that will not have significant adverse effect on the primary uses designated for the lands contained in the d-2 areas. The views of local residents should be solicited and considered through a process of public hearings or meetings.

It is also recommended that access to adjacent lands from major transportation corridors be controlled in such a way that adverse impact on uses and values of such adjacent lands is minimized.

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SCIENCE RESEARCH AND NATURAL AREAS (ECOLOGICAL RESERVES)

Findings

Approximately 220 nominations have been made for ecological reserve status of Science Research and Natural areas throughout Alaska. Forty of these are on d-2 lands. The nominators of areas for reserve status have selected those which, in their view, meet one or more of the following criteria:

1. are examples of important natural ecosystems.

2. represent an ecosystem already modified by man and provide opportunities to study change in response to such modification.

3. are suitable for research activities involving purposeful modification of ecological processes.

4. contain rare or endangered plants or animals or rare examples of botanic, zoologic, or geologic phenomena.

5. are suitable for teaching geologic, botanic, or zoologic principles on the elementary, secondary, or university level.

6. are places where scientific inquiry can be conducted without adverse impact on the environment or persons indigenous to the area.

In some instances in the specific recommendations which follow, areas nominated as Science Research areas have been recommended for protection. The majority of nominated Science Research and Natural areas have not received sufficient study for the Commission to make recommendations at this time.

To enable designation of a balanced and representative group of areas, there is need for a systematic statewide analysis of all nominations for Science Research and Natural areas.

Recommendations

The Commission recommends that a systematic statewide analysis of nominated Science Research and Natural areas be undertaken for the purpose of developing a balanced and representative statewide system of such areas. Such analysis should assess the need for such areas and determine the size and location, uses to be allowed, and the local impact of their reservation.

RIVERS UNDER STUDY IN D-2 UNITS

Findings

The Commission notes that 40 rivers, 29 of which flow through d-2 lands, are under study in Alaska for possible inclusion in the Wild and Scenic Rivers System. Twenty-two of these rivers have been examined in conjunction with the Commission's study of the larger d-2 units, and some specific recommendations concerning these rivers have been made. As noted elsewhere in these papers, the present recommendations of the Commission are addressed to uses of lands which lawmakers should allow, ban, or permit under regulation. Thus, the Commission will consider river classification in detail in subsequent reports.

In some cases, the established public policy for the preservation of outstanding rivers "in their free-flowing condition...for the benefit and enjoyment of present and future generations"* will command that land use planning in the immediate environment be subservient to the national and State interest in the rivers themselves. In other cases, important land uses in surrounding areas may inform river management. Only case-by-case analysis, including local input, can assure both compatibility of land and river management and a planning process employing the appropriate priorities.

Recommendation

Where the surrounding lands are heavily used for the purpose of meeting subsistence needs of local residents, no classification of rivers should be made which will prohibit access to, across, or on the river by motor vehicles and boats.

Specific recommendations have been made throughout this report aimed at preserving or protecting the free-flowing and other natural qualities of a number of rivers. The Commission will make an analysis of all rivers previously withdrawn under Section (17)(d)(2) of the Settlement Act, and will make recommendations as to the classification under the Wild and Scenic Rivers Act.**

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* Sec. 1(b), Wild and Scenic Rivers Act, (P.L. 90-542), October 2, 1968.

** Since the Commission's specific recommendations include findings regarding rivers under study within larger d-2 units, no reiteration of these findings is made here. The Commission's recommendations affecting rivers in these units are summarized in the Introduction (Section I) of this report. A description of the seven rivers under study which are not included within larger d-2 units and a notation concerning testimony received by the Commission with respect to them is included in the specific findings and recommendations in Section III Portions of the Charley River also were considered in detail by the Commission in its recommendations on the Upper Yukon d-2 unit.

UTILITY AND COMMUNICATIONS FACILITIES

Findings

Findings for this general recommendation occur in findings on specific d-2 units and are not restated here.

Recommendations

Unless specifically prohibited, essential utility and communications facilities should be permitted in all of the d-2 areas.

Sites for these purposes should be selected and regulated to provide for maximum protection of primary values and maximum protection of recommended uses on affected lands.

Communications sites and other utility sites cannot always be selected within corridors assigned to transportation facilities, but, where feasible, they should be contained within transportation corridors.

NATURAL BOUNDARIES TO DELINEATE LAND USES

Findings

Findings for this general recommendation occur in findings on specific d-2 units and are not restated here.

Recommendations

Specific recommendations have been made by the Commission delineating allowable uses within boundaries which conform to natural hydrologic divides or other natural features, and which fall within or adjacent to d-2 units. Where no such specific recommendations have been made or exceptions to this standard are stated, the Commission recommends that natural boundaries be recognized in delineating land use areas. To the extent possible, boundaries consistent with the primary values and recommended uses of the respective d-2 units should be conformed to follow hydrologic, physiographic, or other natural features.

RECREATIONAL USES

Findings

Where recreational uses are permitted or recommended, intensive recreational uses may, in themselves, damage the land. Recreational uses should be compatible with the maintenance of environmental quality.

Other findings of this general recommendation occur in findings on specific d-2 units and are not restated here.

Recommendation

Access to and through areas and concentrations of recreational users should be controlled and managed in such a manner as to result in minimum environmental degradation.

PROTECTION UNDER EXISTING LAWS

Findings for this general recommendation occur in findings on specific d-2 units and are not restated here.

Recommendation

In many instances, the value sought to be protected can be protected under existing State and Federal laws; for example, the Clean Air and Water Act, the State and Federal laws respecting archaeological resources, and the fish and game laws of the State of Alaska. It is assumed in all of the recommendations made hereafter that full use will be made of existing laws to provide protection for the lands and waters of Alaska, in general, and the lands and waters within the d-2 study units, in particular.

ALLOWANCE OF ALL USES NOT PROHIBITED

Findings

Findings for this general recommendation occur in findings on specific d-2 units and are not restated here.

Recommendation

Unless specifically prohibited, uses not referred to in the following specific recommendations should be permitted unless incompatible with the primary use or uses designated for each d-2 unit under study.

INTEGRATED MANAGEMENT OF D-2 LANDS WITH MANAGEMENT OF ADJOINING LANDS

Findings

The Commission recognizes that the d-2 lands under study are impacted by uses permitted or disallowed on adjoining lands, and that the uses permitted or disallowed on d-2 lands impact surrounding lands. Essentially, there are four present and potential "landowners" of the lands of Alaska. These are private landowners, Native Village and Regional Corporations, the State of Alaska, and the United States. It is essential that these respective "landowners" fully participate in a coordinated land use planning and management system for all of the lands of Alaska.

Recommendation

The Commission recommends that all of the d-2 lands under study be managed in cooperation and consultation with the managers of adjoining lands. The Commission further recommends that management units, where necessary, be designed for joint management by the State and Federal governments.

CAPE LISBURNE

Area Description

The Cape Lisburne unit lies adjacent to the Chukchi Sea in the northwest quadrant of Alaska. The withdrawal consists of cliffs and bluffs which drop to the sea from elevations of up to 900 feet, low plateaus and mountains trending north and northwest, and the Lisburne Hills which rise to an elevation of 2,500 feet. Drainage is provided through a series of short braided streams which flow into the Chukchi Sea.

Findings

1. This d-2 withdrawal and a companion withdrawal located at Cape Thompson are the two largest far north sea bird colonies on the western coast of North America. Nine species of birds totaling several hundred thousand in number inhabit these colonies.

2. Polar bear and various species of seal are found along coastal portions of the withdrawal. Caribou, moose, bear, wolf, and other species of wildlife are also present in the unit.

3. The wildlife which inhabit the withdrawal are an important source of food (particularly the sea birds and their eggs) for the Natives who reside nearby.

4. The unit has not been thoroughly investigated for its antiquities resources.

5. The petroleum potential of this withdrawal is considered low, although a moderate to high potential appears to exist in the Colville Basin to the east. Oil shale and phosphate potentials are moderate but may not be economically significant, except in the tidewater areas. The exposed limestone of the Lisburne cliffs appears to have high potential as a source for cement. The hard rock mineral potential of the withdrawal is considered low or nonexistent; coal possibilities appear to be moderate.

6. An improved airstrip operated by the U.S. Air Force is located within the withdrawal. The brief summer months afford limited access by sea, provided that offshore ice conditions are favorable. During the winter, dogsled and snow machine are the principal modes of transportation.

7. Although some sport fishing and hunting potential may exist, sightseeing and nature study are the principal recreational opportunities available. Because of the remoteness of this withdrawal, tourism is expected to remain light.

Recommendations

1. To insure the protection of sea bird habitat and areas utilized by ocean mammals, all developmental and other uses which could adversely affect these species should be prohibited in the area used by them (see map--Area A).

2. A variety of uses under regulations that assure no detrimental effects on the adjacent sea bird habitat and ocean mammal areas should be allowed in the remainder of the unit (see map--Area B).

Area Description

The Cape Thompson unit lies adjacent to the Chukchi Sea in the northwest quadrant of Alaska. The withdrawal consists of cliffs and bluffs which drop to the sea from elevations of up to 700 feet and low plateaus and mountains trending north and northwest. Drainage is provided through a series of short braided streams which flow into the Chukchi Sea.

Findings

1. This d-2 withdrawal and a companion withdrawal located at Cape Lisburne are the two largest far north sea bird colonies on the western coast of North America. Nine species of birds totaling several hundred thousand in number inhabit these colonies.

2. Polar bear and various species of seal are found along coastal portions of the withdrawal. Caribou, moose, bear, wolf and other species of wildlife are also present.

3. The wildlife which inhabit the withdrawal are an important source of food (particularly the sea birds and their eggs) for the Natives who reside nearby.

4. Although the withdrawal has not been thoroughly investigated for its antiquities resources, there is a high probability that such resources do exist. This finding is premised on previous archaeological research in the area and on the fact that Eskimo houses approximately 200 years old have been found at Ogotoruk Creek near the unit.

5. The petroleum potential of this unit is considered low, although a moderate to high potential appears to exist in the Colville Basin to the east. The hard rock mineral potential of the withdrawal is considered to be low or nonexistent.

6. An improved airstrip is located within the withdrawal. The brief summer months afford limited access by sea, provided that offshore ice conditions are favorable. During the winter, dogsled and snow machine are the principal modes of transportation through the withdrawal.

7. Although some sport fishing and hunting potential may exist, sightseeing and nature study are the principal recreational opportunities available. Because of the remoteness of this unit, tourism is expected to remain light.

8. An area which includes the Cape Thompson withdrawal has been

nominated for consideration as an ecological reserve. This location was the site of the Atomic Energy Commission's Project Chariot experiments, which have yielded valuable base line data for long term ecological research.

Recommendations

1. This area should be protected as a sea bird habitat and used for scientific research. Unless deemed necessary for scientific study purposes, no mining, oil and gas production, or other developmental uses should be permitted. However, hunting, fishing, and the taking of other renewable resources for subsistence purposes should be permitted.

2. The Ogotoruk Creek area adjacent to this unit should be utilized in a similar manner.

SEWARD PENINSULA

Area Description

This unit includes the north slope of the Bendeleben Mountains, a basin of lava fields and numerous small lakes, a central section of rolling hills, and a northern lake-dotted plain sloping gently northward and westward to the Chukchi Sea.

Findings

1. Hunting, fishing, trapping, and taking of other renewable resources for subsistence purposes by local residents are major activities within the unit. There are considerable trade and sale of products made from marine animals, including carved walrus ivory. The pelts of bear, beaver, fox, and other fur bearers are used for both personal and commercial purposes. Reindeer herding is an important industry on the Seward Peninsula. Reindeer are used as both a source of food and of materials from which garments and craft items are made. At present, virtually all of the land within the unit is under lease for reindeer husbandry. Similar use is made of polar bear, found in northern and western marine areas, and of ocean mammals which are seasonally present.

2. The area is valuable for waterfowl production, adding approximately 500,000 ducks to the annual fall flight. Population densities in habitat areas average about 60 ducks per square mile. Large sea bird colonies exist along the coast and on offshore islands; coastal lagoon areas are used extensively for nesting and feeding. Gyrfalcons and peregrine falcons are also present in many parts of the Seward Peninsula.

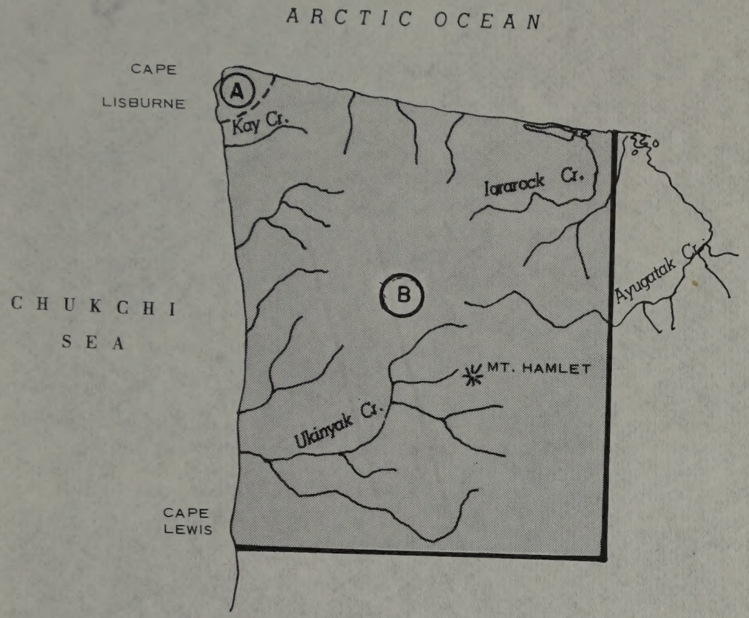
3. Low to moderate numbers of grizzly bear, wolf, and wolverine occur throughout the withdrawal. In the last few years, resident moose populations have been increasing in number.

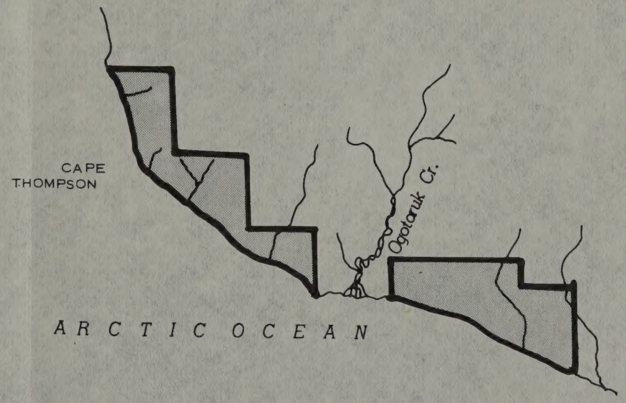
4. Natural and scenic features of special interest on the Seward Peninsula include: the Imuruk lava fields and Imuruk Lake area, the Devil Mountain volcanic field, and important fossil-bearing localities.

5. Recreational opportunities include sightseeing, fishing, hunting, hiking, exploration, nature study, float boating, snowmobiling, and camping. The present use of the unit for these purposes is low. However, an increasing recognition of the recreational opportunities which are available within the unit will probably prompt a greater influx of tourists.

6. The Seward Peninsula contains many important archaeological resources The Trail Creek site is one of the oldest known archaeological finds in the State.

CAPE LISBURNE
CAPE THOMPSON





USE RECOMMENDATIONS

Symbol	Description	Acreage
A	Sea Bird Habitat (Cape Lisburne)	8,000
B	Balance of Unit (Cape Lisburne)	66,000
	Cape Thompson	10,000

SCALE: 1 IN. = 250,000 FT.

7. Imuruk Lake and vicinity have been nominated for consideration as an ecological reserve for study of plant ecology in association with lava fields. In addition, a site near Shishmaref has been nominated for its coastal island vegetation and waterfowl breeding area. The area nominated is substantially larger than many other areas nominated as ecological reserves. It contains no subjects for scientific study that cannot be found in other coastal areas of Alaska.

8. The geothermal potential of this unit is considered good in areas of recent volcanic activity.

9. With the exception of the northern portion which lies within a high potential petroleum province, the petroleum potential of this unit is considered low. The unit lies within two metal provinces favorable for tin, gold, beryllium, lead, tungsten, and silver. The potential of certain portions of these provinces, which have previously produced $150 million worth of minerals, is considered high. Numerous mining claims exist in the area. The coal deposits found in the northern portion of the unit may be of economic significance. Sand and gravel deposits exist in interior basins and along the coastal lowlands.

10. Except for the existing road from Nome to Taylor and limited use of motorboats along the coast, access to the withdrawal unit is provided by light aircraft, dogsled, snowmobile, and all-terrain vehicles. The principal gateway to the unit is via Nome, which is served by commercial jet. Several aircraft landing fields exist within the withdrawal, but none has regular service or maintenance.

Recommendations

1. The Imuruk lava fields and lake (see map--Area A) should be used primarily for sightseeing and scientific study. Construction or placement of recreational and scientific facilities should be permitted if significant environmental degradation will not result. Development of geothermal resources should be permitted. Hunting, except for subsistence purposes, should be prohibited. Any other use which might conflict with the primary uses of this area should be prohibited.

2. In the coastal areas (see map--Area B) any use which could potentially impair the waterfowl habitat should be carefully regulated.

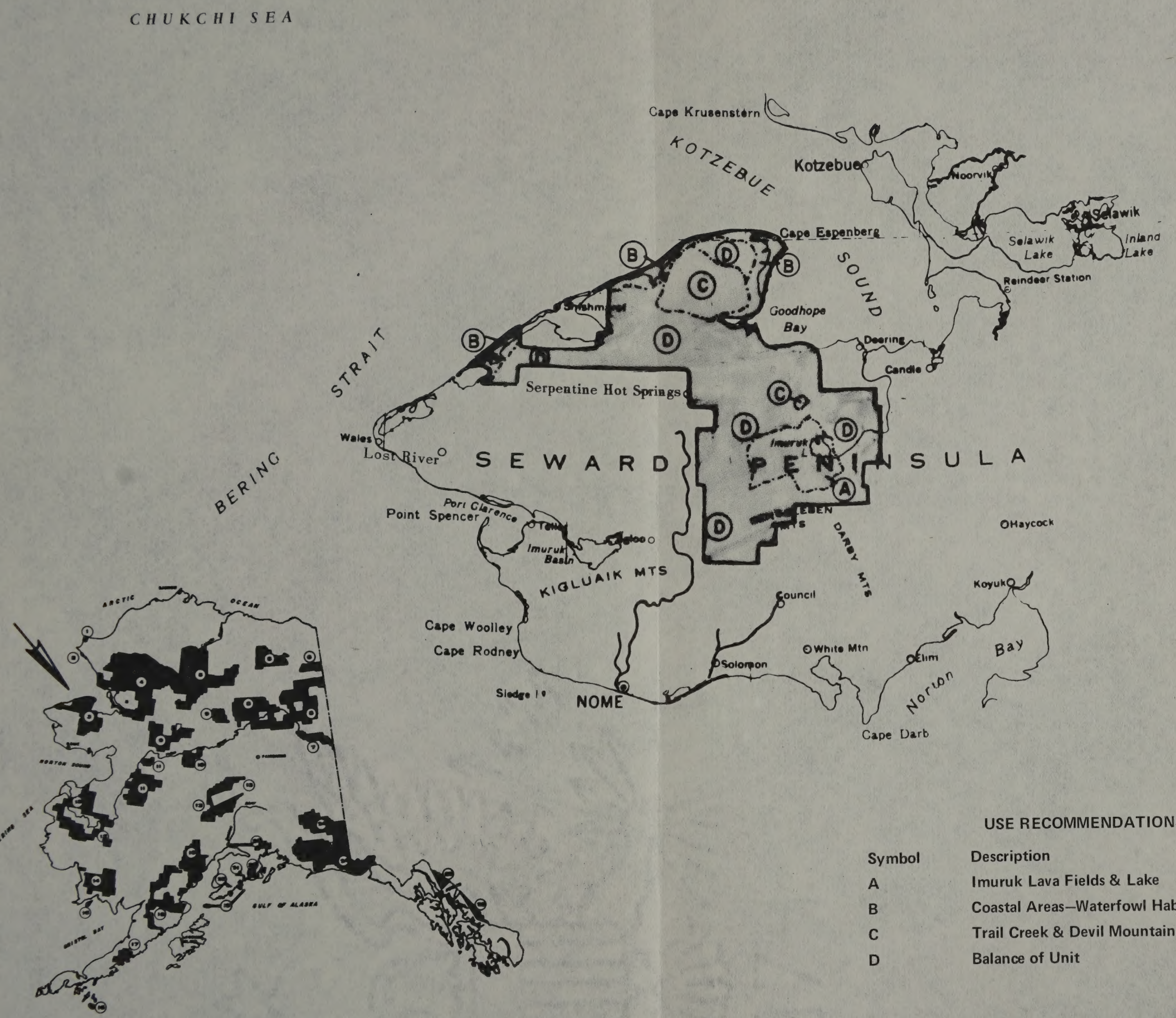
3. The Trail Creek and Devil Mountain volcanic areas should be used primarily for scientific study (see map--Area C). Any developmental or other uses which would interfere with such study should be prohibited.

4. Reindeer grazing should be permitted throughout the withdrawal.

5. Those portions of the unit for which no primary use has been designated should be open to a variety of uses (see map--Area D).

6. The designation of the coastal area around Shishmaref as an ecological reserve is specifically disapproved.

SEWARD PENINSULA



USE RECOMMENDATIONS

Symbol	Description	Acreage
A	Imuruk Lava Fields & Lake	294,000
B	Coastal Areas—Waterfowl Habitat	418,000
C	Trail Creek & Devil Mountain	232,000
D	Balance of Unit	2,329,000

35-203 O - 74 (Face p. 48) No. 2

NOATAK-KOBUK-SELAWIK

Area Description

Because of their physical proximity to each other and the natural and wildlife resources which they have in common, the Noatak, Kobuk, and Selawik national interest withdrawals constitute an integrated unit for planning purposes. Therefore, the units will be treated jointly for purposes of Commission findings and recommendations. Where differences among the three units require, separate findings and recommendations will be made.

The Kobuk withdrawal lies in the area between the Baird Mountains on the north, the Waring Mountains on the south, the Schwatka Mountains on the east, and Hotham Inlet on the west. The Noatak withdrawal is located along the Noatak River between the DeLong and Baird Mountains at the western end of the Brooks Range. The Selawik withdrawal lies in an area between the villages of Shungnak, Kobuk, and Ambler on the northeast, Selawik to the north, Buckland to the south, and Kotzebue to the west. Drainage from the general area is through the Noatak, Kobuk, and Selawik Rivers to Kotzebue Sound and the Chukchi Sea. The area contains only a few small mountain glaciers. Both the Noatak and Kobuk units contain wide river valleys bordered by mountain ranges. All three units contain numerous lakes, potholes, and coastline along Kotzebue Sound.

Findings

1. The three units are used extensively for hunting, fishing, trapping, and taking of other renewable resources for subsistence purposes by the residents of nearby communities, including the larger population centers of Kotzebue, Noorvik, and Selawik. The annual harvest of meat, fish, grass, roots, vegetables, and berries is estimated to be 4.5 million pounds within an area encompassing 30 million acres.

2. Migratory bird habitat of medium to high density population exists in the lake region along the Selawik River, the delta and inland valley of the Kobuk River, the lowland areas near Cape Krusenstern, and segments along the Noatak River. Habitat with medium to low density populations occur along the upper Noatak. In addition, certain species of raptors inhabit the Grand Canyon portion of the Noatak.

3. Except in a few areas, black and grizzly bear, wolf, and wolverine can be found. Portions of the large Arctic caribou herd winter in the lower half of the Noatak drainage, the upper part of the Kobuk drainage, the Selawik Hills, and along the Selawik River west of Inland Lake. Dall sheep are present in portions of the Igichuk Hills, the Baird and DeLong Mountains, and the portions of the two northern units within the Brooks

Range. Moose are found throughout the area, with concentrations on the Selawik, Kugruk, Kobuk, and Kelly Rivers.

4. Various species of fish, particularly salmon, sheefish, Arctic char, and whitefish, are found in the Noatak, Kobuk, and Selawik Rivers.

5. The area encompassed within the three units contains scenic mountains, valleys, clear lakes and rivers, forests, and certain prehistoric features with high scientific value. In general, the areas of highest scenic value are located along the major streams and in the higher mountains.

6. Recreational opportunities are sightseeing, hiking, climbing, fishing, hunting, and float boating. Only a few scattered cabins, mineral prospects, and other signs of human development are present within the withdrawals. Although the general area is remote, it already contains a tourist focal point at Kotzebue. Increased tourism can be expected in future years.

7. Some of the most important archaeological sites in Alaska are found in the area encompassed within the three withdrawal units. Because of its particular importance, the Onion Portage site has been placed on the National Register of Historic Places. In addition, over 100 archaeological sites covering 10 different cultural periods have been found in the Noatak River Valley. It is thought that Cape Krusenstern may contain the settlements of all of the different cultural groups which have walked and hunted the seashore of Kotzebue Sound.

8. The Kobuk unit is partially traversed by a high potential copper province extending westward from the Bornite copper area. There is some small-scale mining by local residents of placer gold along the Salmon and Squirrel Rivers. Low to moderate oil and gas potential exists in the southeastern portion of the unit, and the southwest boundary lies on the northern edge of a high potential petroleum province.

A petroleum province of moderate potential covers the west and northern parts of the Noatak unit. Relatively small, isolated areas with potential for metalliferous mining of nickel, chromium, copper, lead, and zinc are also found within the Noatak withdrawal.

A metal province favorable for uranium, gold, lead, and silver lies in the southern portion of the Selawik unit. Most of the Selawik unit is covered by an oil and gas province of moderate potential, and the eastern part is within a province of high potential.

Some geothermal potential exists near intrusive bodies. Coal deposits occur locally in certain sedimentary rocks found in the vicinity of Kotzebue Sound. Sand and gravel are present in several portions of these withdrawals.

9. There are sufficient stands of spruce, birch, and poplar along the major drainages in the Noatak unit to satisfy local needs for timber. Within the Kobuk unit, harvestable stands are found on the riverbanks of the Kobuk, Squirrel, Selawik, and other drainages. Stands located within the Selawik withdrawal appear sufficient to support a small forest products industry.

10. Narrow strips along the lower Kobuk and Noatak Rivers are suitable for limited gardening. Most of the general area is also considered favorable for reindeer grazing.

11. Three potential hydroelectric sites have been identified on the Noatak River and one on the Kobuk. The Agashashok site, which is located in the lower Noatak Canyon, is regarded as the most promising location for the production of electricity and flood control in northwest Alaska. However, if constructed, its reservoir would flood the entire area withdrawn pursuant to the Alaska Native Claims Settlement Act for possible selection by the Village of Noatak.

12. The only existing transportation facilities within the area are those related to air travel. They include numerous unimproved landing strips and one major airport located at Kotzebue. At present, light aircraft equipped with floats or skiis are used to provide access to remote areas. Surface transportation is principally by boat, snowmobile, and dogsled. Two major utility corridors have been proposed through the Kobuk unit; a possible road route has been identified in the Selawik unit from Kotzebue to Noatak and south to the Seward Peninsula; in the Noatak unit, transportation corridors have been proposed from Kobuk north to Barrow and from Noorvik to Noatak and on to Point Hope via Kivalina.

13. Five locations have been nominated for consideration as ecological reserves. They are located along the middle Noatak River (see map--Area C), the Kobuk River west of Shungnak, the Kobuk Sand Dunes, Jade Mountain, and Cape Krusenstern. These nominations were made in recognition of the value of the specified areas for the study of vegetation, sand dune ecology, geological features, and archaeological resources. Soil conditions in the Great Kobuk Sand Dunes are suitable for community development.

14. That portion of the Noatak River which flows through the Noatak unit has been proposed for possible inclusion in the Wild and Scenic Rivers System. The Salmon, Squirrel, and Ambler Rivers are also under study.

Recommendations

Noatak Unit

1. All developmental uses, including mining and oil and gas production, and other uses which could adversely affect the environment should be

prohibited in a corridor area on either side of the Noatak River from Cutler River to Twelvemile Creek (see map--Area A). Recreational and scientific facilities should be permitted if construction or placement of such facilities will not cause significant environmental degradation. A road which would run generally perpendicular to the Noatak River should be allowed to cross the corridor.

2. Any developmental uses unless necessary for scientific study purposes should also be prohibited in the Cape Krusenstern area (see map--Area B).

Kobuk Unit

1. Unless necessary for scientific study purposes, all uses including mining and oil and gas production which could adversely affect the environment should be prohibited in the Onion Portage and Great Kobuk Sand Dunes area (see map--Areas D and E).

2. Any uses which could potentially impair the waterfowl habitat in certain acquatic areas should be carefully regulated (see map--Area F).

3. Timber cutting should be limited to that needed for local use.

Selawik Unit

1. Any uses which could potentially impair areas of high density waterfowl habitat should be carefully regulated. Reindeer grazing should be regulated under a permit system designed to protect critical habitat during nesting periods. Where feasible, other uses should also be regulated on a seasonal basis.

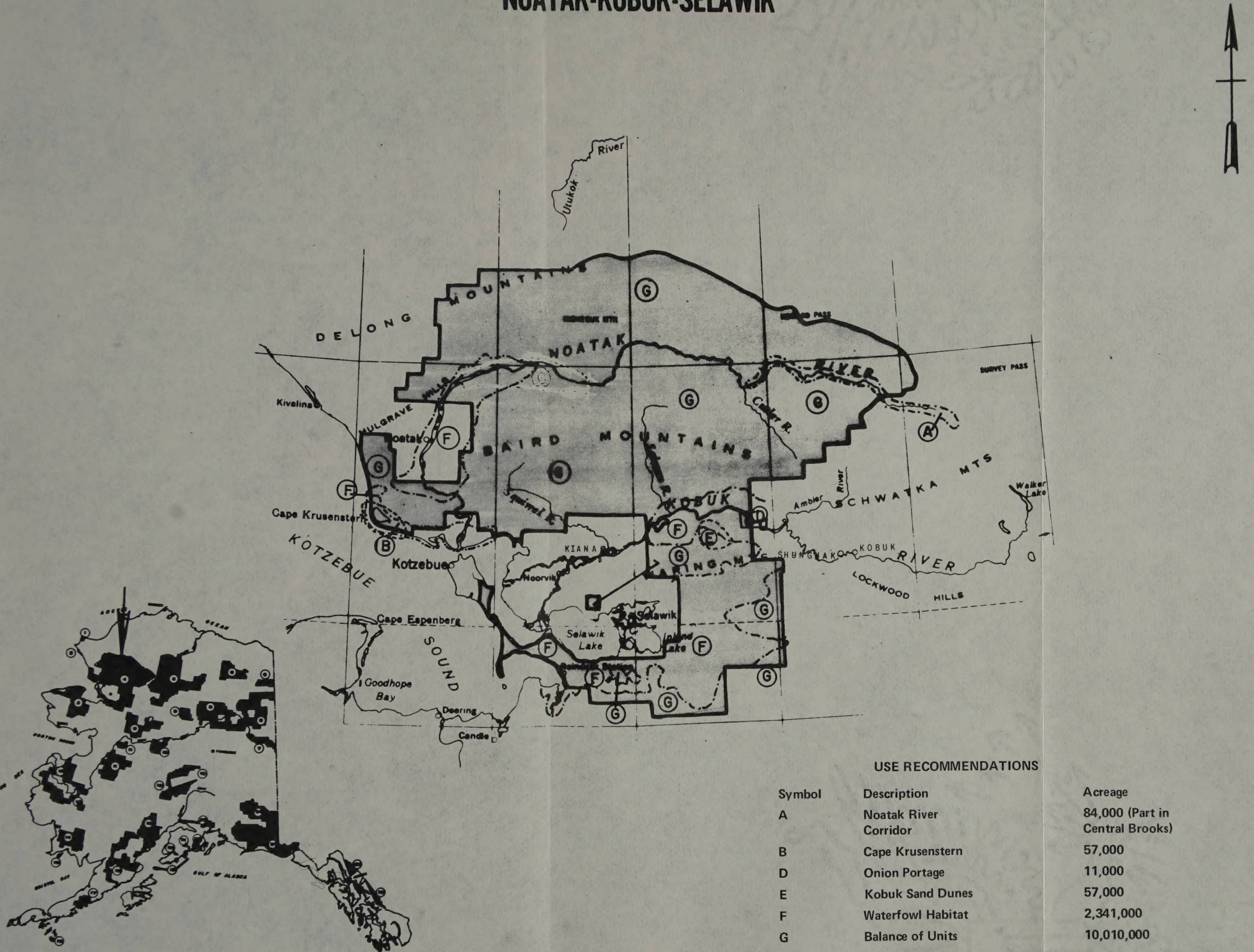
Recommendations Applicable to All Three Units

1. None of the four hydroelectric projects affecting these units should be constructed.

2. Hunting, fishing, trapping, and taking of other renewable resources should be permitted throughout these units. (Note restriction on timber uses in the Kobuk unit.)

3. A variety of uses should be permitted in the portions of these units for which no primary use or value has been designated (see map--Area G).

NOATAK-KOBUK-SELAWIK



USE RECOMMENDATIONS

Symbol	Description	Acreage
A	Noatak River Corridor	84,000 (Part in Central Brooks)
B	Cape Krusenstern	57,000
D	Onion Portage	11,000
E	Kobuk Sand Dunes	57,000
F	Waterfowl Habitat	2,341,000
G	Balance of Units	10,010,000

SCALE: 1 IN. = 40 MI.

CENTRAL BROOKS RANGE

Area Description

The Central Brooks Range unit extends across northern Alaska, dividing the interior lowlands from the Arctic Slope. Irregular in shape, the withdrawal stretches approximately 180 miles from east to west and 170 miles from north to south. A series of rugged glaciated ridges running from east to west rise to elevations of 7,000 to 8,000 feet in the northern portion and 4,000 to 6,000 feet in the south of the unit. Several large rivers flow through the unit in broad U-shaped valleys. The unit also contains a number of scenic lakes.

Findings

1. The Central Brooks Range is an area of picturesque lakes and mountains. Among the most prominent scenic features are Mt. Igikpak, the Arrigetch Peaks, Mt. Doonerak, Cockedhat Mountain, the Gates of the Arctic (formed by Boreal Mountain and Frigid Crags), and Walker Lake. The scenic nature of the unit is enhanced by small glaciers and mountain lakes. Clear-water rivers flow through large valleys among stands of spruce, willow, and poplar and, north of the Continental Divide, through tundra country. The unique scenic, geological, botanical, zoological, and ecological features of certain portions of this withdrawal dramatically illustrate the natural history of northern Alaska.

2. Recreational opportunities include fishing, hunting, float boating, mountain climbing, hiking, and camping. The opportunities for sightseeing, nature study, and exploration are considered outstanding. Hunting, fishing, and sightseeing are the primary recreational activities. At present, however, recreational use is light.

3. Five areas, including the uppermost part of the Alatna River Valley, the Walker Lake area, and the Arrigetch Peaks, have been nominated for consideration as ecological reserves. These nominations were made in recognition of the value of the areas involved for the scientific study of alpine tundra, upland spruce-lichen forest, glacial erosion, and certain other natural features of phenomena.

4. The petroleum potential of the Endicott Mountains is low; that part of the unit north of a line running west from Chandler Lake some 50 miles south of the boundary is high. Oil shale and phosphate deposits are known to exist in the Arctic foothills. However, recovery may not be economical. The coal potential of the northern portion of the withdrawal is also considered high. Sand and gravel deposits are found in or adjacent to stream channels. Several promising metal provinces occur within the withdrawal. These include a major copper province which passes across the southern portion and a province favorable for gold, copper, and other metals which extends through the central part. Important indications of tin are found in the vicinity of Mt. Igikpak.

5. Scattered stands of white spruce and poplar are found in the valleys of the Kobuk and along the north fork of the Koyukuk, the Alatna, and certain other rivers. A few birch and aspen stands grow on southerly slopes, and black spruce bogs occupy the lowland muskeg areas. The timber within the area has local importance for cabin construction, firewood, piling, and mine timbers. Applications are now on file for permission to harvest timber from sites on Walker and Takahula Lakes.

6. Studies indicate that the archaeological potential of the area is high. Major finds have previously been made at Walker Lake and in the upper Killik River drainage.

7. Many species of fish and wildlife are found in varying concentrations throughout the withdrawal. Grizzly bear live throughout the area and are often found in the bottomlands of the Kobuk, Oolamnagavik, Okpikruak, Colville, Killik, and Itkillik Rivers. Black bear are present in the southern part of the area, and wolf and wolverine range throughout. Moose are found along stream bottoms and in the rolling foothills. Their wintering areas are located along the Alatna, Kurupa, Colville, Itkillik, and other similar rivers within the unit. Caribou migrate through the mountain passes; their principal migration routes are along the Alatna, Itkillik, and Anaktuvuk Rivers. Dall sheep are found in relative abundance in the Alatna and Killik River drainages.

8. The area along the Killik and Colville Rivers and around Walker Lake contains waterfowl and shore bird habitats of medium density. The Colville Valley is an important nesting area for certain species of raptors.

9. Various species of fish, including chum salmon, lake trout, grayling, sheefish, northern pike, Arctic char, and whitefish, are found in the area. The Kobuk River is an important spawning stream for sheefish. Chum salmon spawn in the Noatak and Kobuk Rivers.

10. Natives from Anaktuvuk Pass, located about 15 miles from the withdrawal, and from other villages located relatively close to the unit hunt, fish, trap, and take other renewable resources for subsistence purposes in certain portions of the unit. Resources taken by local people include caribou, black and grizzly bear, beaver, moose, certain migratory birds, and various species of fish. Several species of fur bearers are also utilized for clothing and craft objects.

11. Hunting for various species of wildlife, particularly Dall sheep, is of international significance with sportsmen from many countries journeying to Alaska each year to engage in this activity.

12. With the exception of a few unmaintained "bush" airstrips, there are no established transportation, communication, or utility systems within

the withdrawal. Access to the unit during the winter months is primarily by dogsled, snow machine, and ski-equipped light plane. Some of the major rivers which flow through the unit provide surface access in summer months. At present, light fixed-wing and rotor-type aircraft are the principal modes of transportation into the unit. Bettles Field, Kobuk, and Anaktuvuk Pass are the nearest points offering scheduled commercial air service. As use of the area increases, navigational aids and communication sites may be required for air safety. A winter haul road built and used from 1968 through 1970 extends via the John River from Bettles to Anaktuvuk Pass and from there north to Prudhoe Bay. In addition, a transportation corridor from Kotzebue to Fairbanks has been identified through the southern portion of the withdrawal by the State Department of Highways. The Trans-Alaska Pipeline corridor passes to the east of the unit.

(Note: The Nunamiut National Park, as proposed by the Arctic Slope Native Regional Corporation, would encompass certain portions of the Central Brooks Range area. The Commission has carefully considered the testimony of Joe Upicksoun, President of the Corporation, and supporting material presented by the Corporation.)

Recommendations

1. The areas around Arrigetch Peaks, Mt. Igikpak, Walker Lake, the Gates of the Arctic, Kurupa Lake, and along the Noatak River should be recognized as principally important for their scenic, wildlife, recreational, and/or scientific values. Accordingly, all developmental uses, including mining and oil and gas production and other uses which would be incompatible with these primary values, should be prohibited. Development of recreational and scientific facilities should be permitted if their construction or placement will not cause significant environmental degradation (see map—Area A).

2. The areas specified in recommendation No. 1 should be closed to sport hunting. High protection zones within these areas should also be closed to hunting for subsistence purposes (see map--Area A1) hunting, fishing, trapping, and the taking of other renewable resources should be allowed in other areas of the unit. The U.S. Department of the Interior and the State Department of Fish and Game should initiate a joint study to determine whether there are additional areas within the Central Brooks Range which should be closed to sports and/or subsistence hunting or which should be designated as areas of limited access. Among the factors which should be considered in this study are the following: the need to protect wildlife resources within a particular area by imposing an outright prohibition on sports and/or subsistence hunting, the need to promote public safety by imposing such a prohibition, and the desirability of creating conditions within a given area which would allow visitors to view resident wildlife species at close range in their natural state and habitat.

3. Timber cutting should be restricted to that needed for subsistence purposes and local commercial use by residents of the general area and should be prohibited in those areas specified in recommendation No. 1 (see map--Area A).

4. In those portions of the unit (see map--Area B) for which no primary use has been indicated, a variety of uses should be permitted.

A majority of the Commission believes that the prohibition of developmental and certain other uses specified in recommendation No. 1 will insure the protection of the unique scenic wildlife, scientific, and recreational values of the Central Brooks Range unit. Admittedly, the areas referred to in recommendation No. 1 are not as large as those delineated in the minority report. However, we do not believe that size is a necessary concomitant of proper protection or management. It is our view that the boundaries which we have drawn strike the correct balance between the protection of scenic and other values on the one hand, and the development of mineral resources on the other. In making this observation, we do not mean to imply that these two objectives are necessarily incompatible. It is our view that the restrictions provided in the Commission's outline of a permit and lease system for mineral exploration and extraction will prevent environmental degradation of the Brooks Range area.

We want to emphasize the national and international significance of the mineral resources which would not be developed if the minority approach were to be adopted. The expanded protection areas described in the minority report contain some of the most significant copper potential found anywhere in the world. The potential for the occurrence of other metals is also very high. We interpret the national interest to require the prudent development of metalliferous minerals, which are one of the foundation stones of our high standard of living and national security. In the absence of such development, it is very likely that the United States will be compelled to place increasing dependence upon foreign sources to satisfy domestic mineral requirements. The present unstable political situation in many parts of the world and the nation's balance of payments problems indicate to us that such reliance is an unacceptable alternative. Moreover, with respect to the environmental concerns raised in the minority report, we would like to point out that while mining exploration encompasses vast areas, actual development is limited to small sites. Therefore, we believe that with the environmental protection provided by a permit and lease system, any mines which are developed will appear insignificant when viewed in the vast expanse of the Central Brooks Range and certainly will not detract from the scenic and other values which both we and our colleagues in the minority agree should be protected.

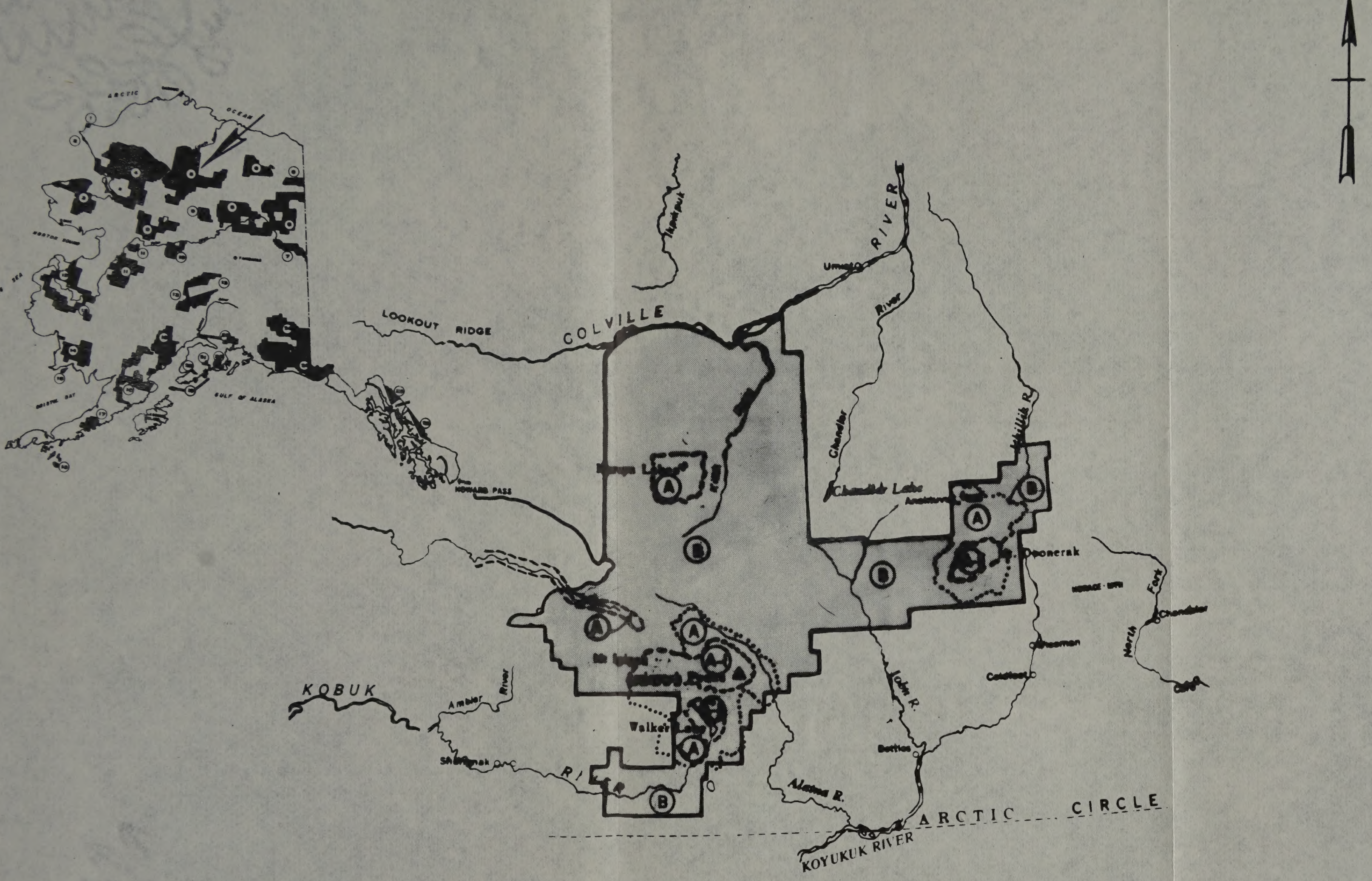
With respect to the protection of wildlife resources, the Commission is unanimous in recommending that the areas specified in recommendation No. 2 be closed to sports hunting and that the more restricted core zones be closed to hunting for subsistence purposes, as well. This recommendation is premised on the Commission's belief that such a prohibition is necessary to promote public safety within the areas involved and to enable visitors to view resident wildlife species at close range in their natural state and habitat. With respect to the question of subsistence hunting, it should be noted that such activity occurs only on a marginal basis, if at all, within the two areas where it will be prohibited. Therefore, it is unlikely that the prohibitions which we are proposing would impose a hardship on local residents.

While considering the reasons cited above for closure of certain areas to hunting in our recommendations, it should also be determined whether there are areas within the Central Brooks Range where closure to hunting might be necessary to insure against possible depletion or deterioration of wildlife and their habitats. Accordingly, we have also recommended that the Department of the Interior and the State Department of Fish and Game initiate a joint study to ascertain whether additional high protection or limited access areas should be designated in the future.

With respect to recommendation No. 4, we believe that the restrictions on timber cutting are necessary to insure the protection of the unit's unique scenic values. Since the quality and quantity of forest stands within the unit indicate that cutting for other than local uses would not be economically feasible, the restrictions which we recommend should not impose a hardship on local residents and, in fact, are consistent with the present use patterns in the area. Moreover, it should be noted that most of the cutting to satisfy subsistence and local commercial needs takes place outside of the areas specified in recommendation No. 1 where developmental and certain other uses would be prohibited.

Outside of the areas designated for special protection, relative resource values indicate that a variety of uses should be permitted subject to appropriate environmental controls. In summary, it is the opinion of a majority of the Commission that prudent management, including the development of mineral resources pursuant to a permit and lease system, can be relied upon to provide necessary protection without the necessity of imposing an outright prohibition on certain uses.

CENTRAL BROOKS



USE RECOMMENDATIONS

Symbol	Description	Acreage
A	Prime Scenic, Recreation, Wildlife or Scientific Values	1,510,000
A-1	High Protection Zones	361,000
B	Balance of Unit	7,144,000

SCALE: 1 IN. = 40 MI.

MINORTIY REPORT ON THE CENTRAL BROOKS RANGE

The Central Brooks Range, as the findings indicate, contains unique scenic, geological, botanical, zoological, and ecological features. The natural history of northern Alaska is dramatically illustrated in significant portions of the withdrawal.

We fully concur with the findings and feel that the Commission majority has acted wisely in recognizing the outstanding scenic and natural splendor of the Central Brooks Range. We also suggest that the Commission majority has seriously erred in their delineation of the zones of highly limited use (designated as Areas A and A1 on the majority report map). These areas are inadequate to protect what the Commission has found to be the principal character of the land that is to be enhanced. Not enough land essential for preservation of the natural, primitive character and value of this outstanding region has been set aside. Hence, we propose a broader and more explicit zoning of the entire d-2 unit.

The accompanying map is zoned into areas which are to be used according to one of five sets of uses. The areas identified with an A are sectors in which no mining or exploration, hunting, or activity for subsistence purposes would be permitted. Within Area A1, as delineated in the minority report, mineral exploration and mining would be prohibited with taking of renewable resources for subsistence purposes and sport hunting to be allowed. Activities for subsistence purposes would also be permitted in the sectors designated A2; but sport hunting, mineral exploration, and mining would be prohibited.

In the B-designated area, sport hunting and subsistence-related activities would be permitted. The only mineral exploration permitted would be by government agencies, or their designated contractors, for the purposes of preparing an inventory of mineral resources present. Extraction would not be permitted. The use provisions of the B area of the minority report were approved by four of the nine Commissioners present.

Mineral exploration by permit and extraction by lease under stringent regulations to prevent any adverse environmental effects would be allowed in Area C. Allowable uses, in general, would be those permitted in Area B of the majority report.

We are also interested in having additional protection, over and above that accorded all d-1 lands, provided for the lower reaches of the Alatna River and in the lower North Fork of the Koyukuk. The former lies within State selected lands and the latter is in a d-1 category, where it was placed as a result of the Memorandum of Agreement between the Governor of Alaska and the Secretary of the Interior in September 1972.

There are a variety of reasons that justify the more stringent use recommendations which we are suggesting. In the first place, it is worth noting that the Nunamiut National Park, as proposed by the Arctic Slope Native Association, recommended more restrictions on sport hunting, mineral exploration and extraction, and subsistence-related activities than those proposed in either the minority or majority report.

Secondly, we strongly feel that mineral exploration or extraction activities are not compatible with the use of the land as wilderness area. For example, a proposal before the National Park Service to engage in nickel or ore extraction in the Glacier Bay National Monument indicates the need for a network of roads with accompanying camp and transportation facilities, an ocean docking terminal, and other transportation facilities. Implementation of such a proposal would destroy the wilderness character of the area.

Even if it could be accepted that ore mining operations do not totally destroy the surrounding land's wilderness quality, it is extremely difficult to stop the gradual encroachment of more and more extensive mining development. Hence, the threat mining constitutes is not necessarily presented by one mine, but rather derives from a succession of mining ventures through an area or the extension of the initial mine.

Mineral extraction, whether by surface or undergound methods, cannot help but be destructive of the surrounding environment. Open pit mining, in particular, involves the disruption of thousands of acres of surface area and the creation of vast amounts of waste material. Neither is the impact limited to the site of extraction. Mining requires people in substantial numbers who, in turn, require a broad array of facilities and services which may result in additional environmental stress. The impact of too many people on a wilderness area has all too frequently been documented.

The process of mineral extraction does not stop at the edge of the mine mouth or pit. The "extract" must be moved to market, and historically this has required some form of surface transportation. Thus, the mining venture extends its impact by opening up wilderness to further disruption and abuse along miles and miles of transportation corridor. The suggestion that the impact of mining is concentrated in insignificantly small areas is simply not accurate. We cannot endorse the idea that mining and wilderness can compatibly exist in close proximity.

The national interest, national security, and balance of payments problems have also been cited as overriding justifications for subverting the intangible scenic and aesthetic values of the area to the supposedly more visible, but certainly not higher, values of an unexplored, unproven, and unknown amount of copper and other metalliferous mineral ores.

We do not feel that the balance of payments argument is valid. Balance of payments problems occur as the result of governmental policy decisions, not from the importation of minerals per se. Flexible exchange rates or a properly pegged exchange rate can resolve balance of payments problems. It might also be noted that net copper imports account for less than one-tenth of one percent of our present national imports.

It is also apparent to us that the national interest is broader than the simple promotion of metalliferous mineral extraction. The nation has reached a point where it recognizes that minerals do not have to be mined just because they are there.

Wild lands are also a commodity with economic potential, as well as their aesthetic and spiritual importance. Their preservation for present and future generations is an investment with returns both tangible and intangible. This generation has no mandate to locate and use up all available mineral resources, including oil and gas. Leaving them in undergound storage until they are more urgently needed (and more economically valuable) makes good sense from the standpoint of the National and State interests. These are national interest lands, to be held in trust for ourselves and posterity.

Finally, we cannot accept the concept of resource self-sufficiency in the name of "national interest" or "national security," a pursuit which with absolute certainty propels us with ever increasing speed towards total dependence on the rest of the world as we exhaust domestic resources.

Submitted by: Commissioners Cooley and Hunter.

EASTERN BROOKS RANGE

Area Description

The western unit is bounded on the south by the withdrawal for Arctic Village and by lands withdrawn pursuant to Section 17(d)(1) of the Settlement Act, on the west and north by Native deficiency withdrawals, and on the east by the proposed Arctic gas pipeline corridor. The southern unit is bounded on the north and west by the Arctic Wildlife Range, on the east by the Canadian border, and on the south by the Arctic gas pipeline corridor. Taken together, the two units are over a 100 miles in width from east to west. The land rises to a series of rugged, glacially eroded peaks which are 5,000 to 8,000 feet in elevation. Mountains are deeply incised at higher levels, grading into gentler slopes and broad valleys. Some small remnant glaciers exist. Except near large streams, the units are underlain by continuous permafrost.

Findings

1. Residents of Arctic Village and Kaktovik hunt, fish, trap, and take other renewable resources for subsistence purposes on these lands.

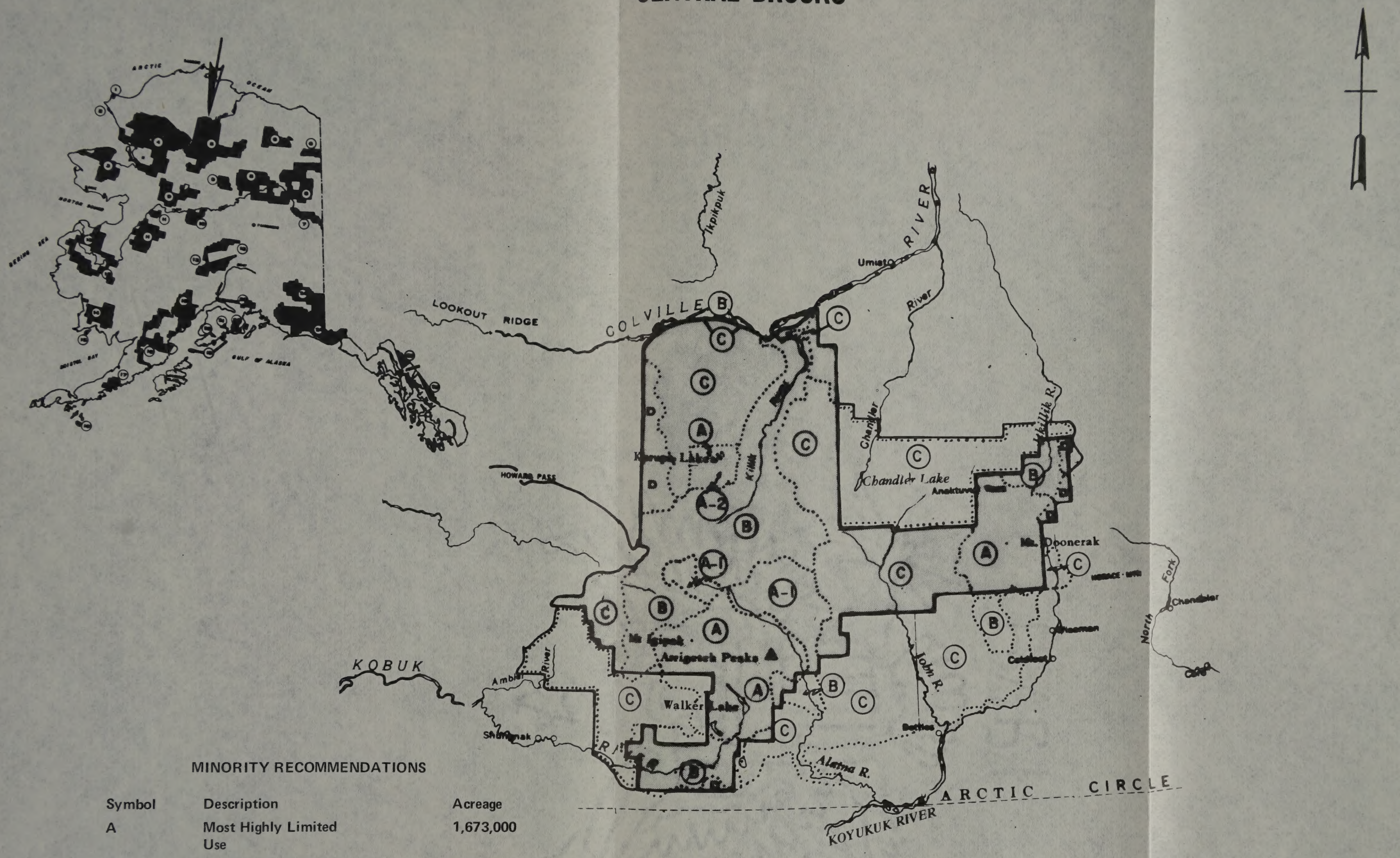
2. As is the case in many other parts of the Brooks Range, various species of wildlife are common. Grizzly bear, wolverine, wolf, and red fox are scattered throughout the area. Moose are present in river bottoms, and the Porcupine caribou herd migrates seasonally through the area. Dall sheep are found in the mountains. The units possess very little value for waterfowl; however, some raptor habitat does exist. Arctic char and grayling are found in the streams.

3. The Marsh Fork/Canning River area contains high concentrations of numerous species of wildlife which exist in a special ecological relationship that merits protection and further scientific study.

4. Forest timber stands within the two units are classified as noncommercial; however, they are suitable for local fuel consumption and construction of cabins.

5. The potential for petroleum, oil shale, and phosphate is considered moderate. The hard rock mineral potential is considered low. Sand and gravel deposits are not now economically significant. Some limestone potential exists. To date, the area's mineral resources have not been adequately evaluated due to a lack of necessary data.

CENTRAL BROOKS



MINORITY RECOMMENDATIONS

Symbol	Description	Acreage
A	Most Highly Limited Use	1,673,000
A-1	Limited Use with Sport Hunting & Subsistence Activities Allowed	564,000
A-2	Limited Use with Subsistence Activities Allowed	173,000
B	Government-Sponsored Mineral Exploration Only	2,375,500
C	Mineral Exploration & Extraction	3,547,500
D	Balance of Unit (No Uses Recommended)	321,000

SCALE: 1 IN. = 40 MI.

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6. The units remain largely in their natural state.

7. While the scenic value of the western unit is considered good with scattered sites of high quality, there are no scenic features of outstanding national importance. The same is true of the southern unit, where the scenic values are considered to be low to medium.

8. Both units have potential for recreational uses, such as sightseeing, stream fishing, hunting, and wildlife observation. At present, recreational use is light.

9. The archaeological possibilities have not yet been assessed. On the basis of earlier studies conducted near Arctic Village, additional investigations are planned in the Junjik and East Fork of the Chandalar valleys.

10. The Sheenjek and Koness Rivers are being studied for possible inclusion in the Wild and Scenic River system.

11. In view of the surface terrain and probable losses to migrating caribou herds, the reindeer grazing potential is considered low.

12. There are no developed transportation, communication, or utility systems within the withdrawals. Light fixed-wing or rotor aircraft, snowmobile, dogsled, and small boats are the primary means of transportation through the units. The State Department of Highways has projected a transportation corridor north from Arctic Village to connect with the Arctic gas pipeline corridor.

Recommendations

1. Because of its high wildlife values and potential as a scientific study area, the Marsh Fork/Canning River area (see map--Area A) should be closed to all developmental uses, including mining and oil and gas production, and other uses which would alter the existing ecology.

2. With the exception of the Marsh Fork/Canning River area, neither of these units appears to possess scenic or wildlife resources which merit special protection. Therefore, various uses should be permitted subject to appropriate regulations.

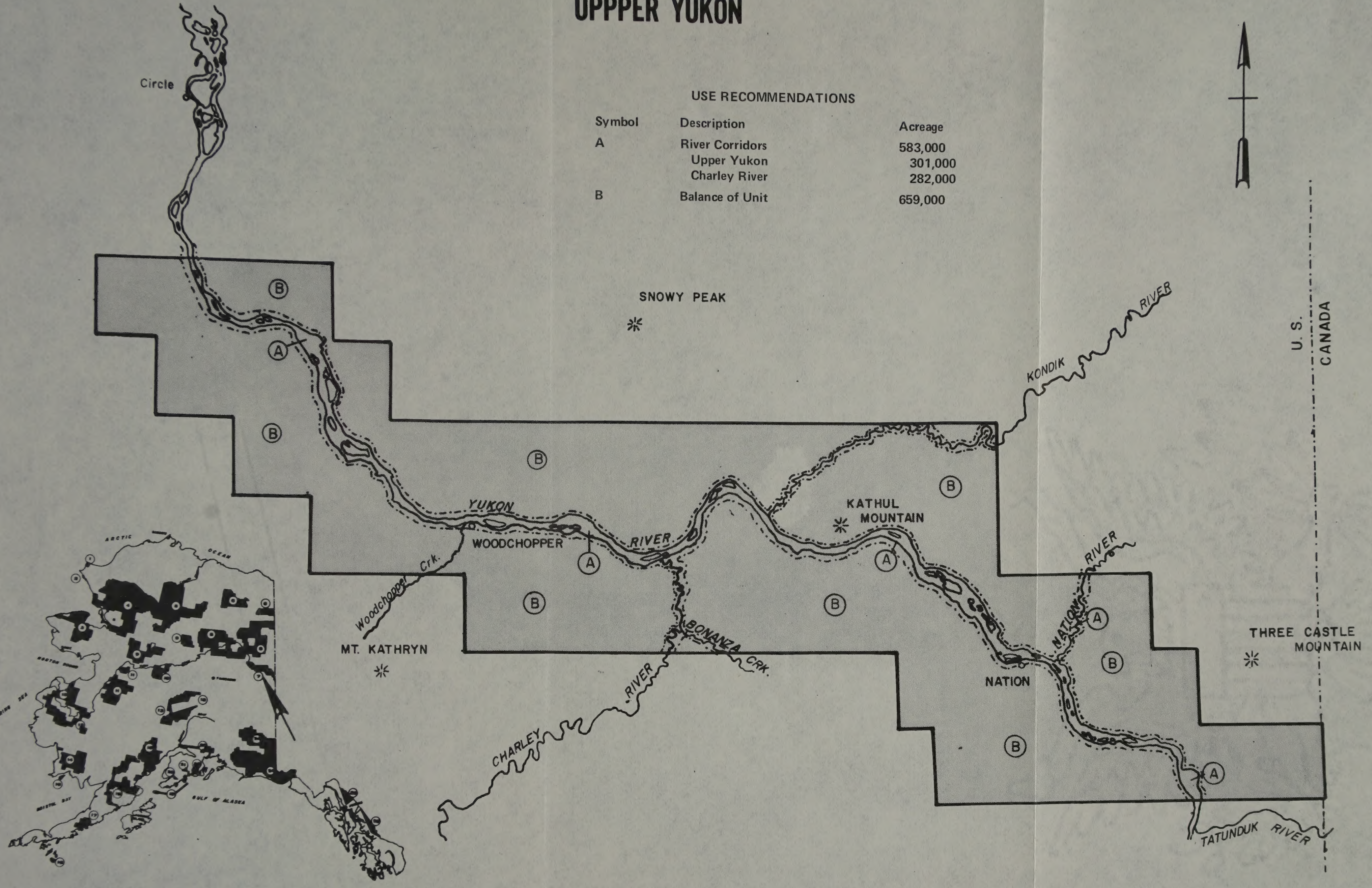
3. Timber cutting should be restricted to that harvested for fuel consumption, home building, and other subsistence purposes by residents of the general area.

4. That portion of the gas pipeline withdrawal which lies adjacent to the two units should be used and managed in accordance with the stipulations applicable to these units and other adjoining lands.

UPPPER YUKON

USE RECOMMENDATIONS

Symbol	Description	Acreage
A	River Corridors	583,000
	Upper Yukon	301,000
	Charley River	282,000
B	Balance of Unit	659,000

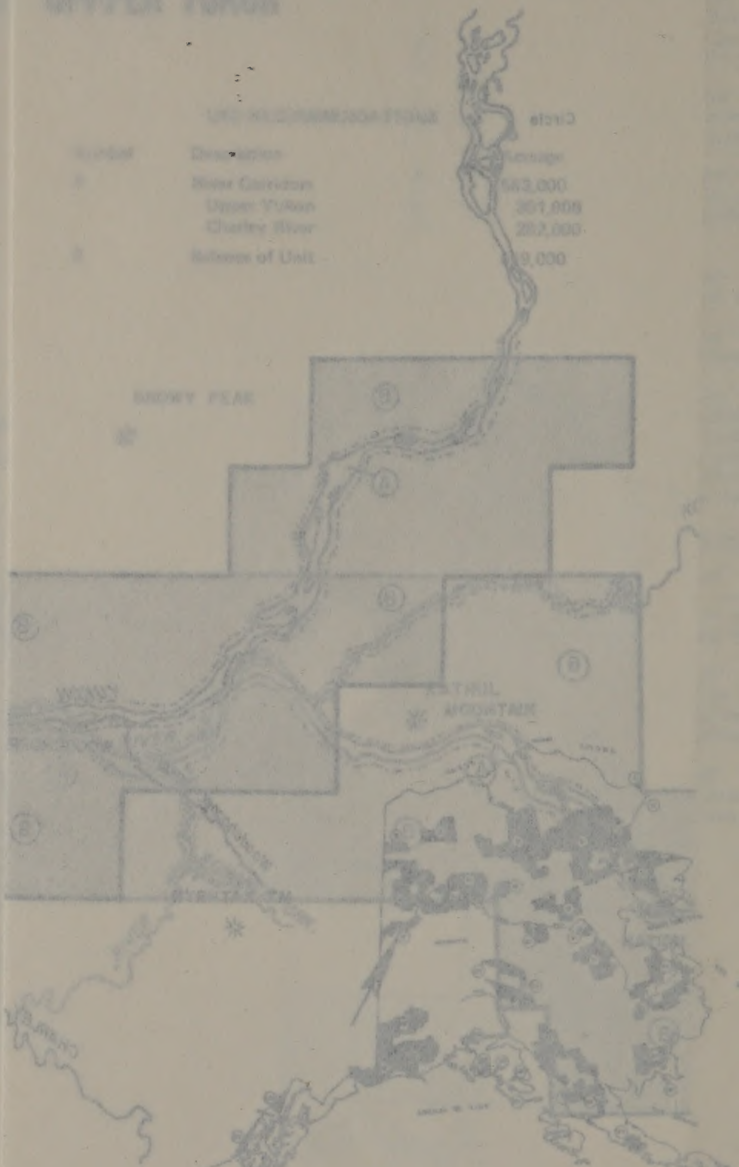


SCALE: 1 IN. = 500,000 FT.

UPPER YUKON

UNIT RECOMMENDATIONS

Symbol	Designation	Acreage
[illegible]	River Corridors	583,000
	Upper Yukon	301,000
	Charley River	282,000
[illegible]	Balance of Unit	[illegible]



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Area Description

This unit is located near the Canadian border on both sides of the Yukon River. The area includes ridges and open valleys which merge with the terraced lake-dotted plain of the Yukon Flats to the northwest, discontinuous low hills which border lowlands in the north, and the mountains of the Yukon/Tanana Uplands in the south.

Findings

1. The section of the Yukon River located within the withdrawal is one of the most scenic segments of this waterway. Along this portion, the river is bordered on both sides by hills or mountains, colorful bluffs, bottomland forests, and marshes. This portion of the Yukon River constitutes the principal segment of a scenic recreation riverway system, which includes much of the Charley River and portions of the Kandik, Nation, and Tatonduk Rivers. In addition, there are numerous structures and artifacts of historical interest along the river in this unit. These date from the Klondike Gold Rush when the Yukon River was used extensively to gain access to the Yukon Territory.

2. The unit offers many recreational opportunities, including fishing, hunting, cross-country skiing, float boating, some power boating, rock and mineral collecting, sightseeing, snowmobiling, hiking, and camping. Tourism, which is now relatively heavy around Eagle and Circle, can be expected to increase in the future.

3. Soil erosion exists along all large streams. Erosion has been accelerated in certain areas by highway construction, mining activities, and fire control access roads.

4. Approximately 110,000 acres on benches bordering the Yukon River and an additional 170,000 acres of bottomlands contain soil suitable for agricultural development. Any future development will require the construction of irrigation facilities.

5. The eastern portion of the withdrawal is considered to have good oil and gas potential. Oil shale and phosphate are also found. A province favorable for several different types of metals lies partly within and partly adjacent to the southwest boundary of the withdrawal unit. This province covers the Fortymile area, which is considered to have high to moderate metal potential. Placer gold production has occurred in the past on certain streams within the withdrawal; copper mineralization is also known.

6. A hydroelectric and flood control project has been proposed for construction on the Yukon River near Woodchopper Creek. If built, significant portions of the unit would be inundated.

7. The withdrawal includes approximately 250,000 acres of commercial timber with an estimated 265 million board feet of good river-bottom spruce and poplars, as well as upland stands of spruce, birch, and aspen.

8. Six unmaintained landing strips have been constructed along the Yukon River. Surface transportation within the withdrawal is principally by barge, boat, dogsled, and snowmobile. Road access to the withdrawal exists at Circle in the north and at Eagle in the south.

9. Because of the great range of undisturbed vegetation and ecological and aquatic values along the entire Charley River, its drainage has been nominated as a potential ecological reserve. The lower portion of this drainage lies within the withdrawal unit.

10. Because of their high scenic, paleontological, and other natural values, portions of the Yukon, Kandik, and Charley Rivers are being studied for possible inclusion in the Wild and Scenic River system.

11. This withdrawal contains 80 to 100 square miles of high grade waterfowl habitat with a breeding population of 99 ducks per square mile. The area is also considered to have one of the best habitat of peregrine falcon in the State.

12. Moose are found in high concentrations in several portions of the withdrawal. Caribou, wolf, wolverine, and black bear are also common.

13. The Yukon River and its clear water tributaries support grayling, whitefish, and several varieties of salmon.

Recommendations

1. No developmental uses, including mining and oil and gas production, or other uses which would further alter the environment should be permitted within the corridor area along the Yukon River (see map--Area A). Development of recreational, scientific, and other facilities necessary to foster the primary values of the corridor area should be permitted within the corridor if no significant environmental degradation will result. The establishment of such a corridor is considered necessary to protect the scenic value of this area and to preserve its rich history.

2. The remainder of the withdrawal, which is not found to contain any outstanding natural or wildlife values, should be opened to a variety of uses subject to appropriate restrictions (see map--Area B).

3. Hunting, fishing, and taking of other renewable resources should be allowed throughout the unit. Timber cutting should be limited to that needed for subsistence purposes by residents of the general area.

4. The Woodchopper Dam hydroelectric project should not be built.

5. Agricultural cultivation should be allowed under a leasing system designed to provide necessary environmental protection.

6. That portion of the Charley River which flows through the adjoining d-1 withdrawal should be protected in a manner similar to that described for the Upper Yukon area.

YUKON FLATS

Area Description

This unit extends from the Canadian border westward for 250 miles and from the villages of Stevens and Circle to the north for distances of 80 and 120 miles, respectively. The central and major portion consists of low, wet, lake-dotted flats. The land rises gently to the north and east from the major river tributaries to ridges of 1,500 to 2,500 feet on the Porcupine plateau. In the west, the terrain rises to the Hodzana Highlands; to the south, the withdrawal is bordered by the Tanana uplands, which rise from elevations of 1,800 to 3,000 feet.

Findings

1. The Yukon Flats is one of the most productive waterfowl areas in the world, with an annual fall flight averaging approximately 2.1 million ducks and geese. Other wildlife, including moose, bear, and wolf are also distributed throughout the withdrawal.

2. Much of the unit lies within a petroleum province considered to have high potential. A petroleum province of moderate potential covers most of the remainder. Metal provinces favorable for gold, antimony, silver, tin, tungsten, lead, and zinc overlap the northwest, southwest, and south boundaries of the withdrawal. Sand and gravel are available in tributary river valleys.

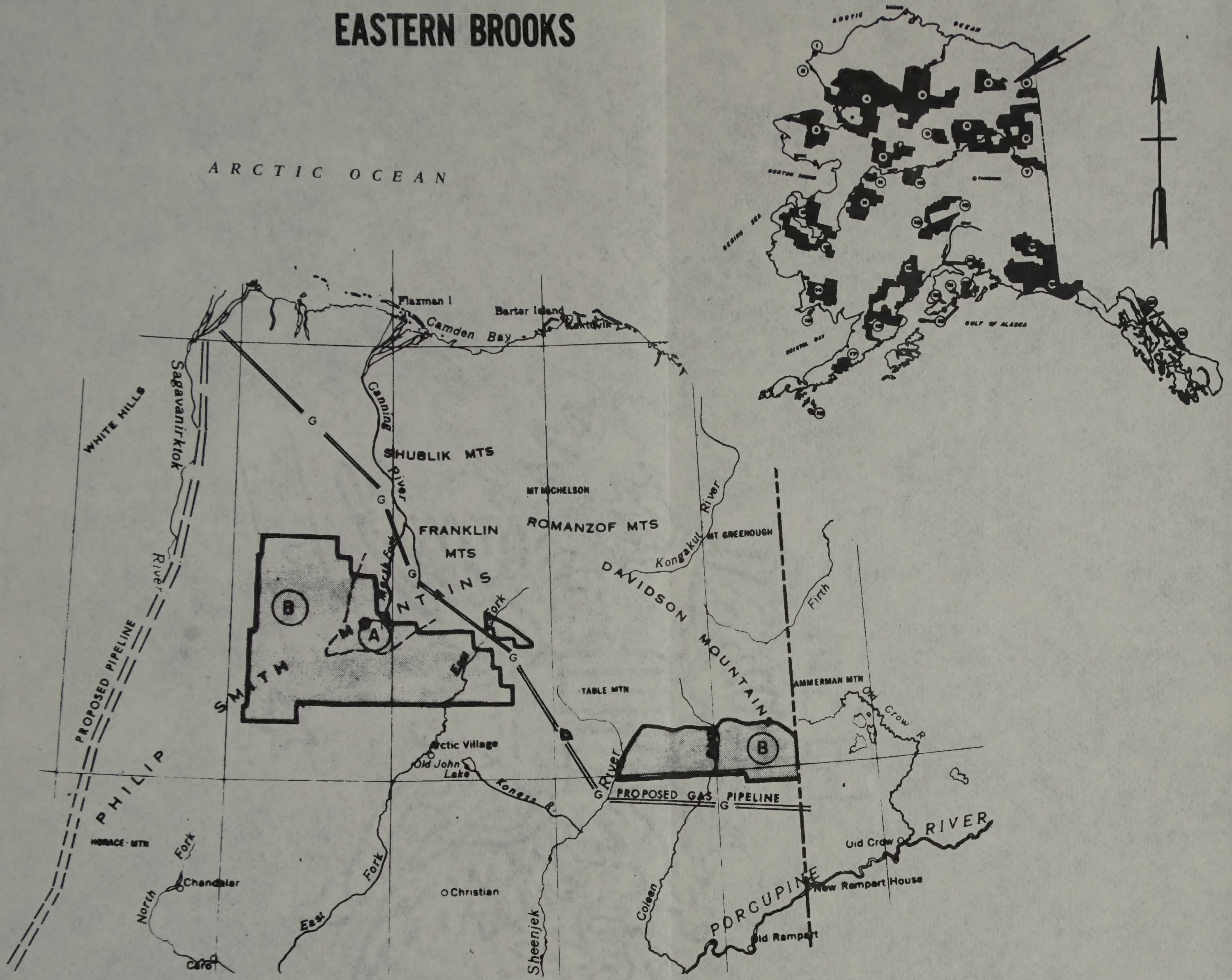
3. Approximately 2,100,000 acres of this unit are considered physically suitable for agriculture. At the present time, it would appear that any crops produced on these lands would be competitive in local markets only.

4. Forest stands covering approximately 2.84 million acres of the unit are estimated to contain over 3 billion board feet of timber. A significant portion of these stands is considered to have commercial value. About 55 million board feet of commercial timber could be produced each year. This level of production would satisfy the requirements of several small sawmills providing timber products for local use.

5. Three potential ecological reserves have been identified in the area. They are relatively small in size and contain representative vegetative types.

6. If constructed, the proposed Porcupine River and Rampart hydroelectric projects would have significant impacts on the unit. The former site is located 12 miles from the Canadian border; its reservoir would lie primarily in Canada. The second site is located 40 miles downriver

EASTERN BROOKS



USE RECOMMENDATIONS

USE RECOMMENDATIONS

Symbol	Description	Acreage
A	Marsh Fork Canning River	163,000
B	Balance of Units	2,356,000

SCALE: 1 IN. = 40 MI.

from the western end of the unit. Much of its 6.8-million-acre reservoir would fall within the boundaries of the present withdrawal, inundating much of the unit's waterfowl habitat.

7. Except near the villages, most of the unit remains in its natural state.

8. Many local residents hunt, trap, fish, and take other renewable resources from these lands to meet their subsistence needs.

9. The upper Porcupine River, the Sheenjek River, Beaver Creek, and Birch Creek are presently under study for possible inclusion in the national Wild and Scenic Rivers System. Portions of these rivers flow through the withdrawal.

10. Two major transportation corridors have been proposed that lie within the southern boundaries of the withdrawal. At present, boat, dog-sled, and snowmachine are the principal modes of surface transportation. Except at Fort Yukon, which receives daily commercial aviation service, airport facilities within the withdrawal consist of unimproved landing strips.

11. Although no archaeological and historical sites other than known 19th and 20th century villages and mining camps have been found, the archaeological potential of the area is considered good in view of the results of a survey carried out to the west along the proposed route of the Trans-Alaska Pipeline.

Recommendations

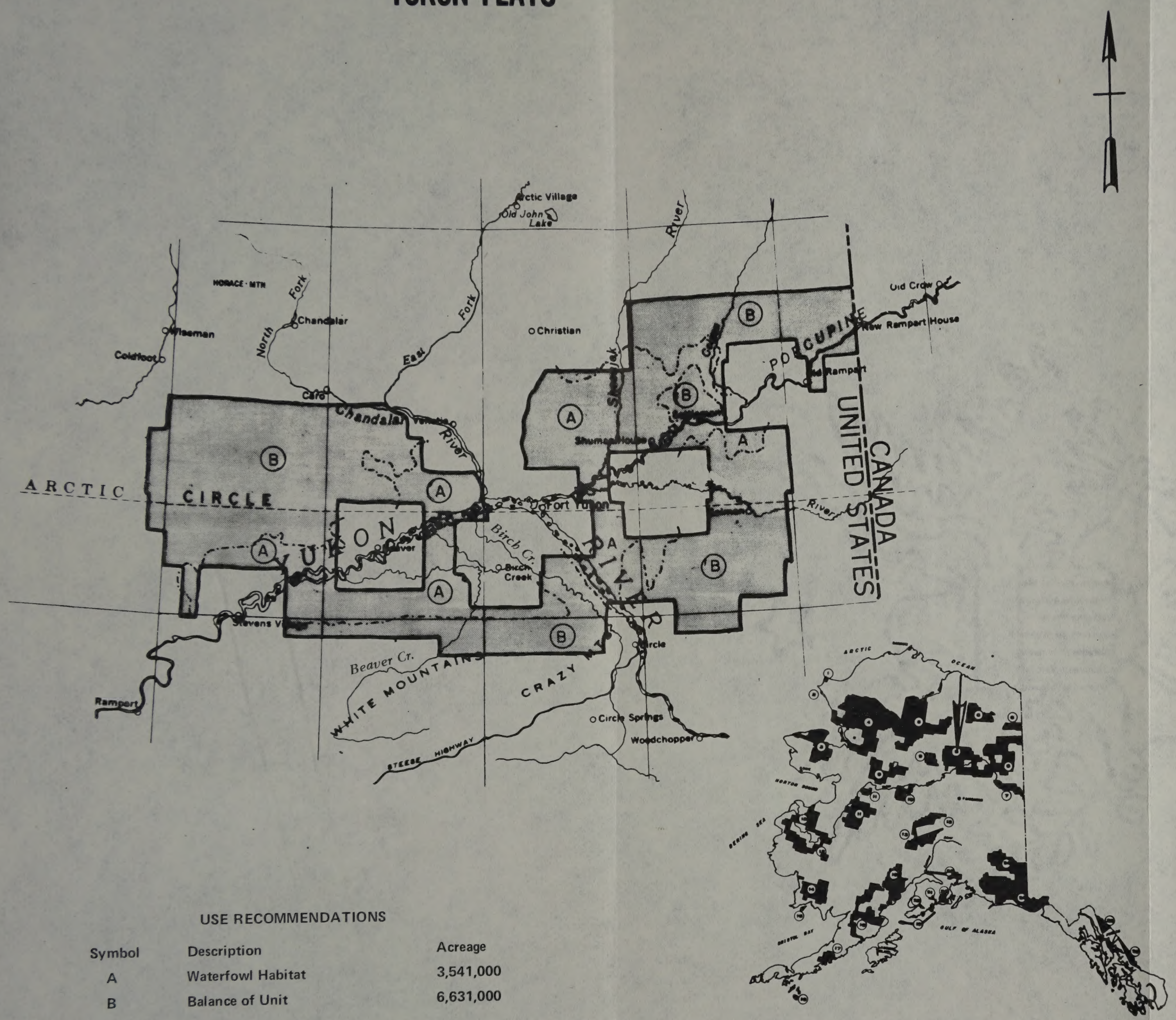
1. This withdrawal should be recognized as chiefly valuable for the waterfowl habitat it contains (see map--Area A) and for its oil and gas potential. Oil and gas exploration and production and exploration and extraction of other minerals should be carefully regulated to assure no adverse impact on the waterfowl habitat.

2. Agriculture and timber harvesting should be permitted in the following areas with no or relatively low concentrations of waterfowl: along the southern boundary of the withdrawal, in upland areas along the Yukon and Porcupine Rivers, and in the Twelvemile Mountain region (see map--Area B). Agricultural cultivation should be allowed under a leasing system designed to provide necessary environmental protection.

3. No hydroelectric projects which would adversely affect waterfowl habitat should be constructed.

Proper management, including the implementation of a suitable permit and leasing system for mineral exploration and extraction and the resolution of potential use conflicts through the spatial separation of uses, should minimize the possibility of conflict and any environmental degradation to the waterfowl habitat.

YUKON FLATS



USE RECOMMENDATIONS

Symbol	Description	Acreage
A	Waterfowl Habitat	3,541,000
B	Balance of Unit	6,631,000

SCALE: 1 IN. = 40 MI.

KOYUKUK-KANUTI FLATS

Area Description

The Koyukuk and Kanuti Flats units are located in the Koyukuk River drainage and consist generally of low plains containing numerous lakes, meandering streams, and bogs.

Findings

1. Hunting, fishing, trapping, and the taking of other renewable resources by residents of six nearby villages are the major current uses of Koyukuk Flats. Similar uses are made of Kanuti Flats by residents of three villages.

2. The units contain medium to high-grade waterfowl habitat which produces an annual fall flight of some 266,000 ducks and large numbers of white-fronted geese. Waterfowl production in these areas is dependent upon frequent and severe flooding which retards plant succession.

3. Both the Nogahabara Sand Dunes and the adjacent Koyukuk Flats to the south have been nominated for consideration as ecological reserves. These nominations were made in recognition of the value of these areas for scientific study related to sand dune ecology and the formation of meander scroll, oxbow, and thaw lakes.

4. Forested lands within the withdrawal units contain an adequate timber base to support a local forest products industry. Approximately 470,000 acres within the units contain an estimated 400 million board feet of commercial timber.

5. There is high potential for tin, tungsten, gold, lead, and zinc in the southeastern part of the Kanuti Flats unit. The area around Indian River in the northeastern portion of the Koyukuk Flats unit is considered favorable for gold, lead, and zinc. Oil and gas potential for both units is low. Deposits of sand and gravel that could be of economic significance are found in both units.

6. A preliminary survey by the Soil Conservation Service indicates that 150,000 acres of flood plain in the Koyukuk Flats unit may be suitable for agriculture. The possibility of spring flooding restricts the types of crops which can be grown in this area.

7. Three possible sites for hydroelectric power generation and flood control have been identified in the general area. These projects are the Dulbi and Kanuti sites on the Koyukuk and Kanuti Rivers, respectively, and the Kaltag site on the Yukon. Although it is located outside the unit, the Kaltag project, if constructed, would inundate all of the waterfowl habitat in the units and an area lying within a promising metal province. While creating a smaller reservoir, the Dulbi project would also submerge waterfowl habitat and promising mineral lands. The Kanuti site would flood virtually all of the Kanuti Flats. The cost of constructing any of the three sites is considered high in relation to the benefits which would accrue.

8. The archaeological values of the two units are considered to be high. The discovery of the interior Ipiutak settlement of Hahanudan Lake and the fluted points of Batzatena are important evidence of the long and diverse culture history of interior Alaska.

9. Numerous unimproved landing strips are located within the units. Surface transportation is primarily by boat, snowmobile, and dogsled. Such travel takes place mainly over trails established by historic use. A road is planned for construction in the utility corridor for the Trans-Alaska Pipeline, which lies immediately east of the Kanuti Flats unit. A need for communication sites and navigational aid locations within the two units may materialize in the near future.

10. With a few exceptions, both units remain in their natural state. The scenic value of the two units is low; there are no scenic features of outstanding national importance.

11. Black bear, wolf, and caribou are found in the units. Moose are found primarily in the Kanuti Flats.

12. Various species of fish, including kind and chum salmon, sheefish, and whitefish, span in the Koyukuk River and other streams and lakes within the two withdrawals.

13. Recreational opportunities include sport hunting and fishing, sightseeing, nature study, and float boating. Recreational use of these units has been light.

Recommendations

1. Unless compatible with its use for scientific study, developmental uses, including mining and oil and gas production, and other uses which

could adversely affect the environment should be prohibited in the Nogahabara Sand Dunes area (see map--Area A).

2. The waterfowl habitat (see map--Area B) should be protected; any developmental or other uses which would potentially impair this habitat should be carefully regulated.

3. A variety of uses should be allowed under appropriate environmental restrictions in those portions of the unit for which no primary use or value has been indicated (see map--Area C).

4. Development of the three proposed hydroelectric and flood control projects impacting these units should not be permitted at this time.

NOWITNA

Area Description

The Nowitna withdrawal unit is located in central interior Alaska to the south of the Yukon River. The unit encompasses the land lying along the lower part of the Nowitna River. It is characterized by flats dotted by lakes and ponds and surrounded by low mountains.

Findings

1. Hunting, fishing, trapping, and the taking of other renewable resources for subsistence purposes by residents of the surrounding area are the major current uses of the unit. There is also some sport hunting by residents of the Fairbanks area.

2. The unit contains waterfowl habitat of medium density for several species of ducks and geese, which migrate to the four major North American flyways. Numerous species of shore birds and wading birds are present in the unit. Bald eagles and marsh hawks are the dominant raptors.

3. The habitat for other wildlife--principally moose, wolf, and fur bearers--is good but not critical. Black bear, wolverine, and caribou are also present.

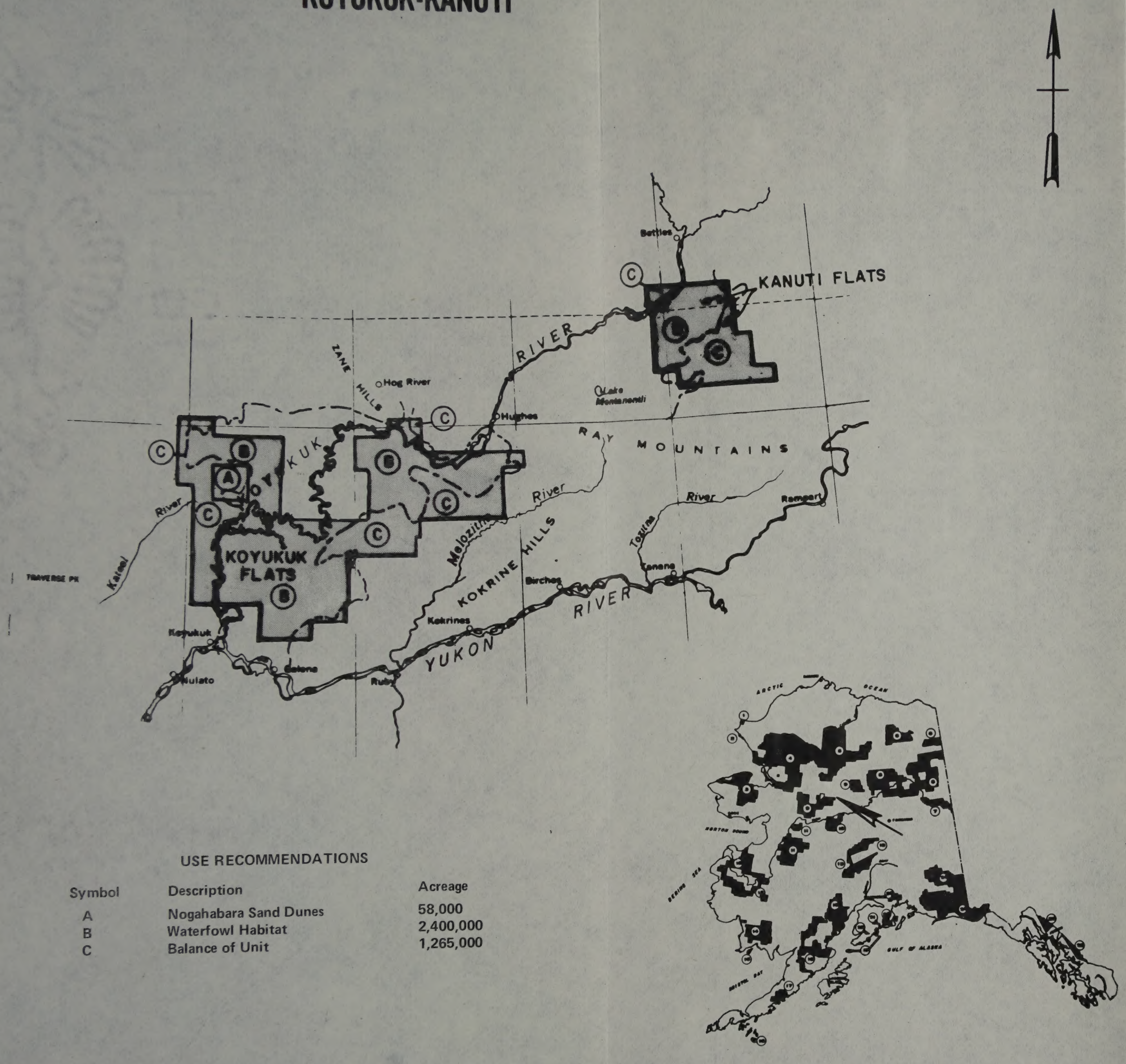
4. Bottomland white spruce and poplar forests are located along the Yukon and Nowitna Rivers within the unit. These forests combined with those of adjoining areas could provide a base for small timber industry. Most of the stands of larger trees are within 1 mile of the rivers. Presently, timber along the rivers is used on site for building trapping cabins and for meeting other needs related to subsistence. Some timber is processed at a small sawmill in Ruby and is used there for building houses, docks, and other local construction.

5. The northern portion of this unit contains approximately 225,000 acres physically and climatically suitable for agricultural production of cereal and grass forage crops and cool weather vegetables.

6. The entire unit lies within a mineralized belt of moderate to high potential for tin, tungsten, gold, lead, zinc, and silver. The southeastern part of the unit lies in another metal province favorable for antimony, gold, and silver. There are active mining claims in the northeastern corner of the unit. Oil and gas potential is low. Some of the few extensive gravel deposits in the Yukon River drainage are found on the river flood plains and associated terraces of this unit.

7. The damsites inventoried at Ruby and Holy Cross would provide flood control protection along the Yukon below the Tanana River; but,

KOYUKUK-KANUTI



USE RECOMMENDATIONS

Symbol	Description	Acreage
A	Nogahabara Sand Dunes	58,000
B	Waterfowl Habitat	2,400,000
C	Balance of Unit	1,265,000

if developed in combination as proposed, would inundate 70 percent of the unit.

8. Access to the unit is via the Yukon River and by air. The unit is not presently served by any developed transportation, communication, or utility systems. Major transportation means utilized are light aircraft, snowmobiles, and motor boats. Navigational aids and communication or utility sites or systems could be developed with very minimal impact on any resource value.

9. The Nowitna River is the prime transportation artery within the unit. It has additional value as a spawning area for anadromous fish. Testimony received at public hearings held by the Commission in communities near the unit (Galena, Tanana, Ruby) revealed deep opposition to Wild and Scenic River classification of the Nowitna River. Residents of nearby communities make use of the river and the land along its banks in a variety of ways; e.g., motorized boating, snowmobiling, timber cutting, trapping, mining. They fear restrictions on current and planned uses. An area along the Nowitna River has also been nominated as an ecological reserve for its representative floodplain white spruce and stands of balsam poplar.

10. This unit has no scenic feature of outstanding national importance and no significant recreational potential. Currently, sport hunting and rock hounding are the primary recreational uses.

11. The small portions of the unit located on the northern banks of the river may make management more difficult than if the boundaries conformed to physiographic lines or natural features--in this instance, the Yukon River.

Recommendations

1. No overall primary use for this unit should be identified.

2. Continued hunting, fishing, trapping, and taking of other renewable resources should be allowed.

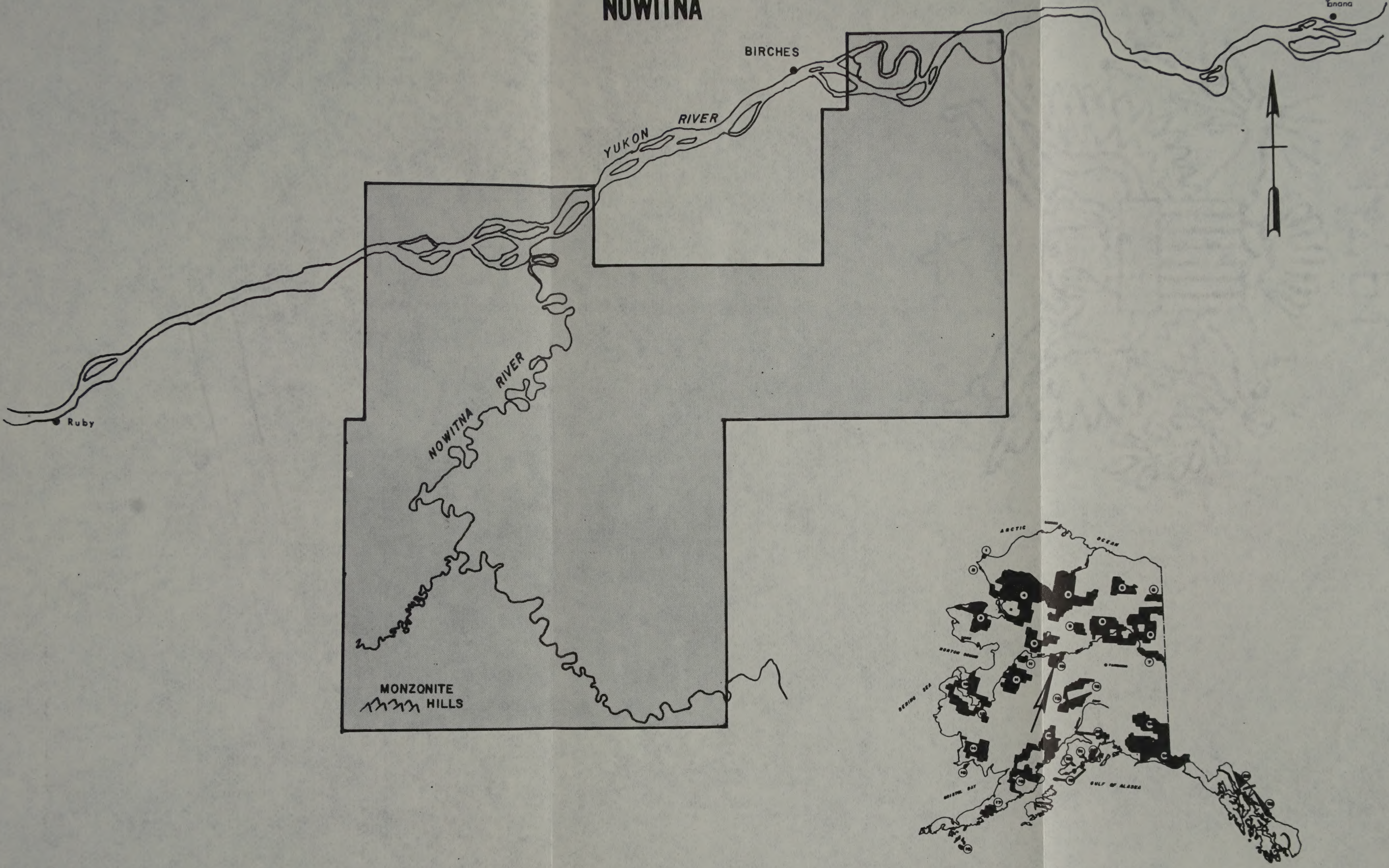
3. The areas identified for potential agricultural use should be available for future development. Agricultural experimentation should be encouraged.

4. Mineral exploration and extraction should be allowed under a mineral permit and lease system.

5. Timber cutting should be allowed under appropriate environmental controls.

6. Development of hydroelectric and flood control projects impacting this unit should not be permitted at this time.

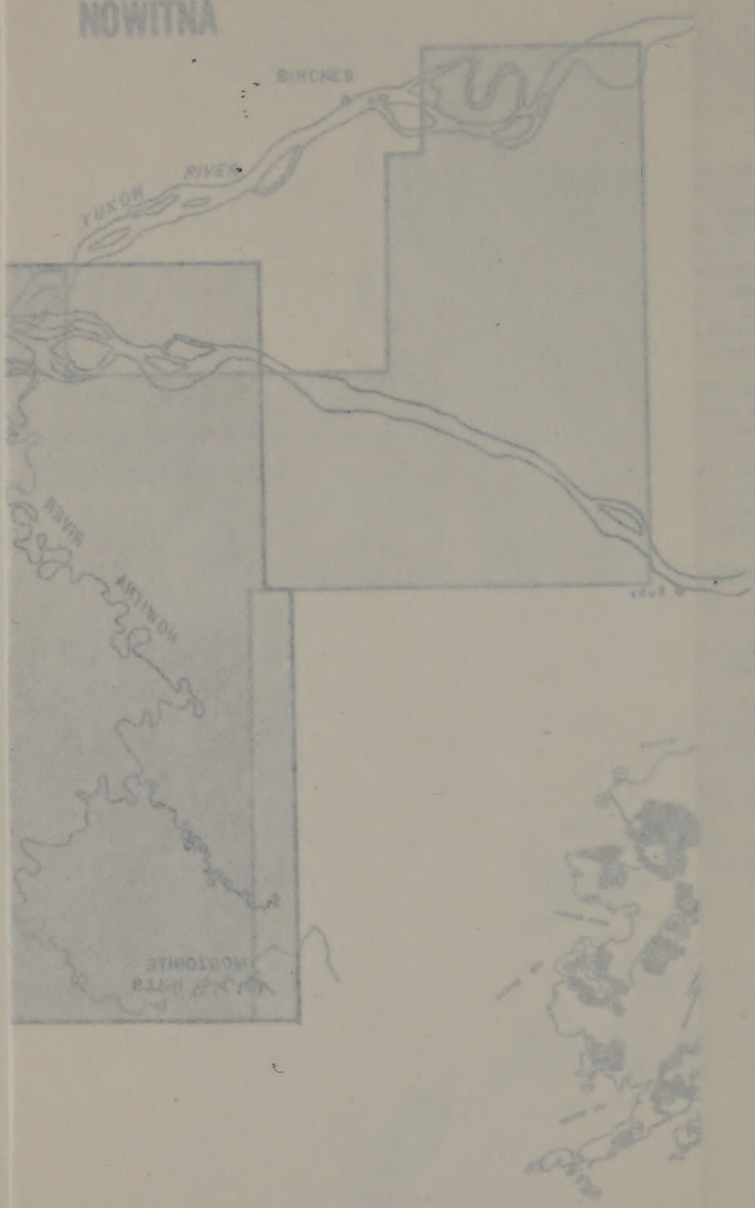
NOWITNA



Total Acreage 952,000

SCALE: 1 IN. = 500,000 FT.

NOWITNA



SCALE: 1 IN. = 800,000 FT.

INNOKO FLATS AND KAIYUH SLOUGH

Area Description

The Innoko Flats unit surrounds the upper portions of the Innoko River and extends west across the Kaiyuh Hills to the Yukon River. The Kaiyuh Slough unit is located to the north of the Innoko Flats unit and between the Kaiyuh Hills and the Yukon River. Both units contain low valley floors along the Yukon River, rolling uplands, and high hills and ridges along their eastern boundaries.

Findings

1. Innoko Flats with its many lakes is prime waterfowl habitat for several species of ducks, including pintail, widgeon, and greenwinged teal. The Kaiyuh Slough contains waterfowl habitat of medium density. Eagles and marsh hawks are the dominant raptors in both units.

2. The major use of these units is currently hunting, fishing, trapping, berrypicking, and taking of other renewable resources for subsistence purposes by residents of several nearby villages.

3. Bear, wolf, caribou, moose, and fur bearers are the principal game animals of these units and are a major food item in the subsistence economy of the nearby communities.

4. Both units contain stands of spruce along the Yukon, Innoko, and Iditarod Rivers. The growth rate of these trees is considered high for interior Alaska. They are used locally for fuel and home and cabin building. If used together with the forest resources of surrounding areas, these stands could provide the base for a small timber industry.

5. Initial surveys have shown that the floodplain of the Innoko River in the central and eastern portions of the unit has agricultural potential for cereal, grass forage, and cold weather vegetables. Of the 184,000 acres of land with soils suitable for agriculture, approximately 25 to 50 percent is tillable, with unfavorable slopes for farming on the remainder.

6. The Kaiyuh Hills area of the Innoko Flats unit and the uplands to the east and south lie within a mineral province of moderate to high potential for tin, tungsten, gold, lead, and zinc. The Kaiyuh Slough unit does not lie within a known metal province.

7. Both units lie within an oil and gas basin of low to moderate potential.

8. There are significant gravel deposits along the Yukon River and its tributaries that could be used for local construction in surrounding areas.

9. Two hydroelectric and flood control damsites that would impact these units have been inventoried at Holy Cross and Kaltag. If built, these dams would provide navigational improvements and flood control along the Yukon River. The Holy Cross dam would inundate 60 percent of the Innoko Flats and 30 percent of Kaiyuh Slough. The Kaltag dam would inundate 60 percent of the Kaiyuh Slough. Flood control is not now required because of the lack of extensive development along the Yukon River. Neither can a demand for the power generated by the projects be foreseen at this time. The uses that would be precluded by development of hydroelectric and flood control projects are currently of greater value than any uses that would be enhanced by development of these projects.

10. The only access to this unit is via the Yukon River. The unit is not served by any developed transportation, communication, or utility systems. Boats and float-equipped aircraft are the major means of transportation used during the 4 ice-free months. In the winter, snowmobiles and some dogsleds are used.

11. Archaeological potential is good. The remains of a large historical settlement have been located near the confluence of the Khotol and Yukon Rivers.

12. There are no scenic features of outstanding national importance in either unit.

13. Small portions of these units on the western and northern banks of the Yukon River may make management more difficult than if the units' boundaries conformed to physiographic lines or natural features--in this instance, the Yukon River.

Recommendations

1. Any use which might have an adverse impact on the waterfowl habitat within Innoko Flats and Kaiyuh Slough should be carefully regulated (see map--Area A).

2. The continuation of hunting, fishing, trapping, and taking of other renewable resources should be allowed in both units.

3. Timber cutting should be allowed under appropriate regulations.

4. The lands within the Innoko Flats suitable for agriculture should be available for possible future agricultural development. Agricultural experimentation should be encouraged.

5. Mining under permit and lease should be allowed in the uplands of Innoko Flats.

6. Exploration and production of oil and gas should be allowed with appropriate environmental controls in both units.

7. Gravel extraction should be permitted for local construction purposes when it can be done without detriment to fish and wildlife.

8. Development of hydroelectric and flood control projects impacting these units should not be permitted at this time.

YUKON-KUSKOKWIN DELTA

Area Description

This unit is composed of two contiguous but distinct areas. Area A is that part of the unit south of the Yukon River and west of the existing transportation route between the Kuskokwim and Yukon Rivers (see map); it consists mainly of low hills and potholed and marshy coastal lowlands. Area B is that part of the unit north of the Yukon River and that portion of the unit lying south of the river and east of the transportation route; Area B consists mainly of the Andreafsky and other small river valleys and the southern uplands of the Nulato Hills.

Findings - Area A

1. The area is one of the most important waterfowl nesting areas on the entire continent. It has an average fall flight of about 2.3 million ducks. The Delta also provides nesting habitat for 50 percent of all black brant, 80 to 90 percent of all cackling and emperor geese, and for virtually all of the white-fronted geese that migrate to the Pacific flyway. The fall population of brant and geese may exceed 800,000 birds. The area provides major nesting grounds for approximately 40,000 whistling swans. Also present are large populations of shore and water birds, including sandhill cranes and Arctic and redthroated loons.

2. The area provides important habitat for small fur bearers including beaver, mink, Arctic fox, lynx, land otter, and muskrat. Moose and caribou are present in the area, providing a major food item for residents.

3. Several species of salmon--chiefly king and chum salmon--are abundant in the unit. Large catches are harvested annually by residents of nearby communities for subsistence purposes. The area has potential for sport fishing.

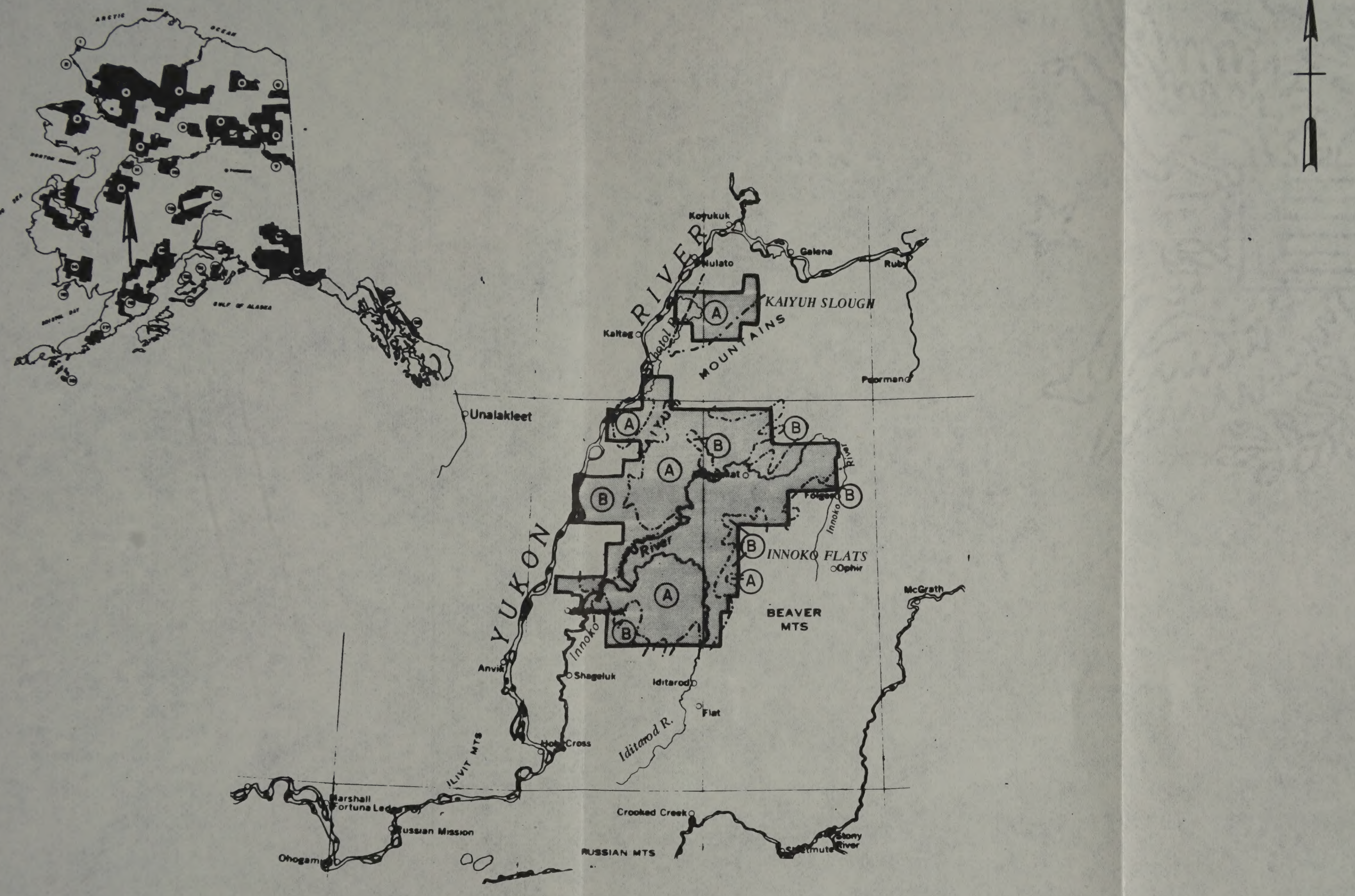
4. The major activity in the area currently is hunting, fishing, trapping, and taking of other renewable resources for subsistence purposes by residents of settlements along the Yukon River. The total population of these settlements is approximately 8,000.

5. The potential for oil and gas is moderate, except in the northwest portion where potential may be high.

6. The soils of the area erode easily and are of weak bearing strength. Consequently, the area does not lend itself to most kinds of development, e.g. road construction, development of commercial or industrial sites.

7. The area possesses no scenic features of outstanding national importance.

INNOKO-KAIYUH

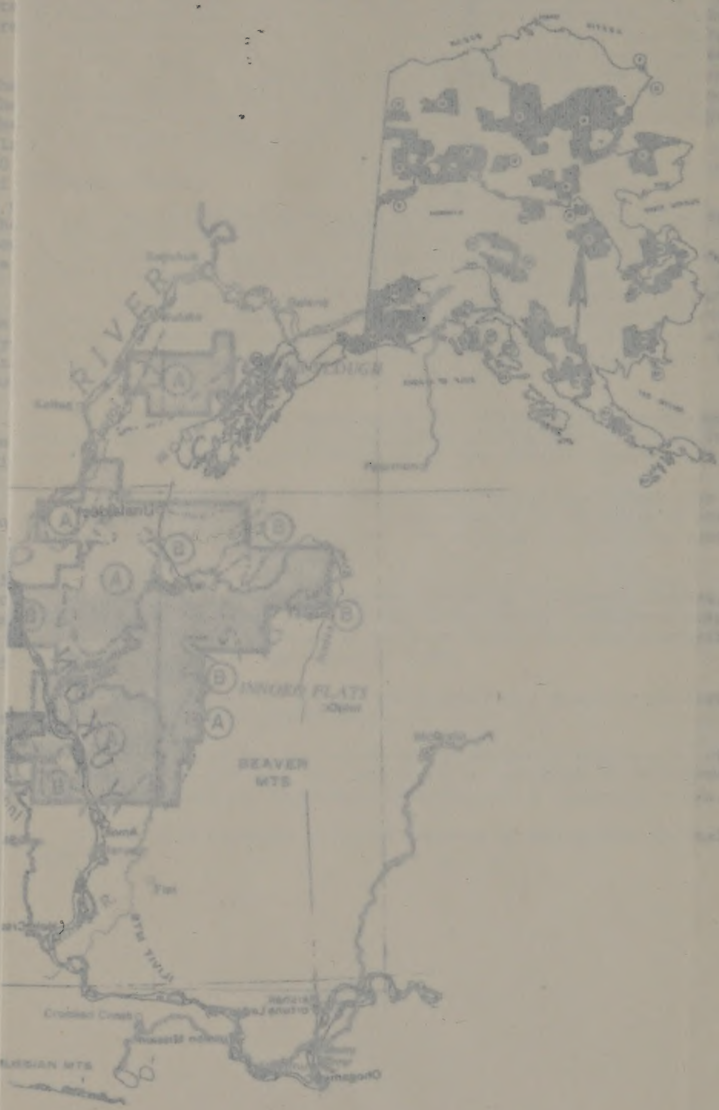


USE RECOMMENDATIONS

Symbol	Description	Acreage
A	Waterfowl Habitat	2,449,000
B	Balance of Units	1,119,000

SCALE: 1 IN. = 40 MI.

INOKO-KAIYUH



USE RECOMMENDATIONS

Symbol	Description
A	Waterfowl Habitat
B	Balance of Units

SCALE: 1 IN. = 40 MI.

Recommendations - Area A

1. Uses which would have potential adverse impact on the waterfowl habitat should be carefully regulated.

2. Continued hunting, trapping, fishing, and taking of other renewable resources should be allowed.

3. Oil and gas production and mineral exploration and extraction should be allowed under a permit and lease system with stipulations designed to insure protection of the waterfowl habitat.

Findings - Area B

1. The major use of the area currently is hunting, fishing, trapping, and gathering of renewable resources for subsistence purposes by residents of Yukon River settlements.

2. The Yukon River and several streams in the Nulato Hills constitute an important salmon fishery for local residents. King, chum, and silver salmon are the major species harvested. Salmon is the major food item for people of the surrounding communities. Other fish found in the area include sheefish, several species of whitefish, Arctic char, lake trout, grayling, and pike.

3. The area supports some moose, bear, wolf, and fur bearers.

4. The area contains waterfowl habitat, most notably in the southeastern and northwestern corners. Population density of waterfowl is lower than in Area A.

5. Hunting, fishing, and river boating are the major recreational opportunities available.

6. There is moderate mineral potential for gold, lead, and molybdenum. Oil and gas potential is considered moderate, but a zone of high potential abuts the northwest boundary of the area. A metal province favorable for mercury, antimony, and gold extends slightly into the noncontiguous portion of the withdrawal south of the Kuskokwim River (see map). Adjacent to this area is the Nyac mining district which has produced $15 to $20 million in placer gold.

7. An area of 1.5 million acres in the Nulato Hills is suitable for reindeer grazing. The estimated carrying capacity for the range there is 4,000 to 5,000 reindeer.

8. The area has no scenic features of outstanding national importance.

Recommendations - Area B

1. No single, overriding primary use should be identified.

It is expected that use of the many resources in the area will be limited in scope and in intensity, thus assuring compatability of all uses under appropriate regulations.

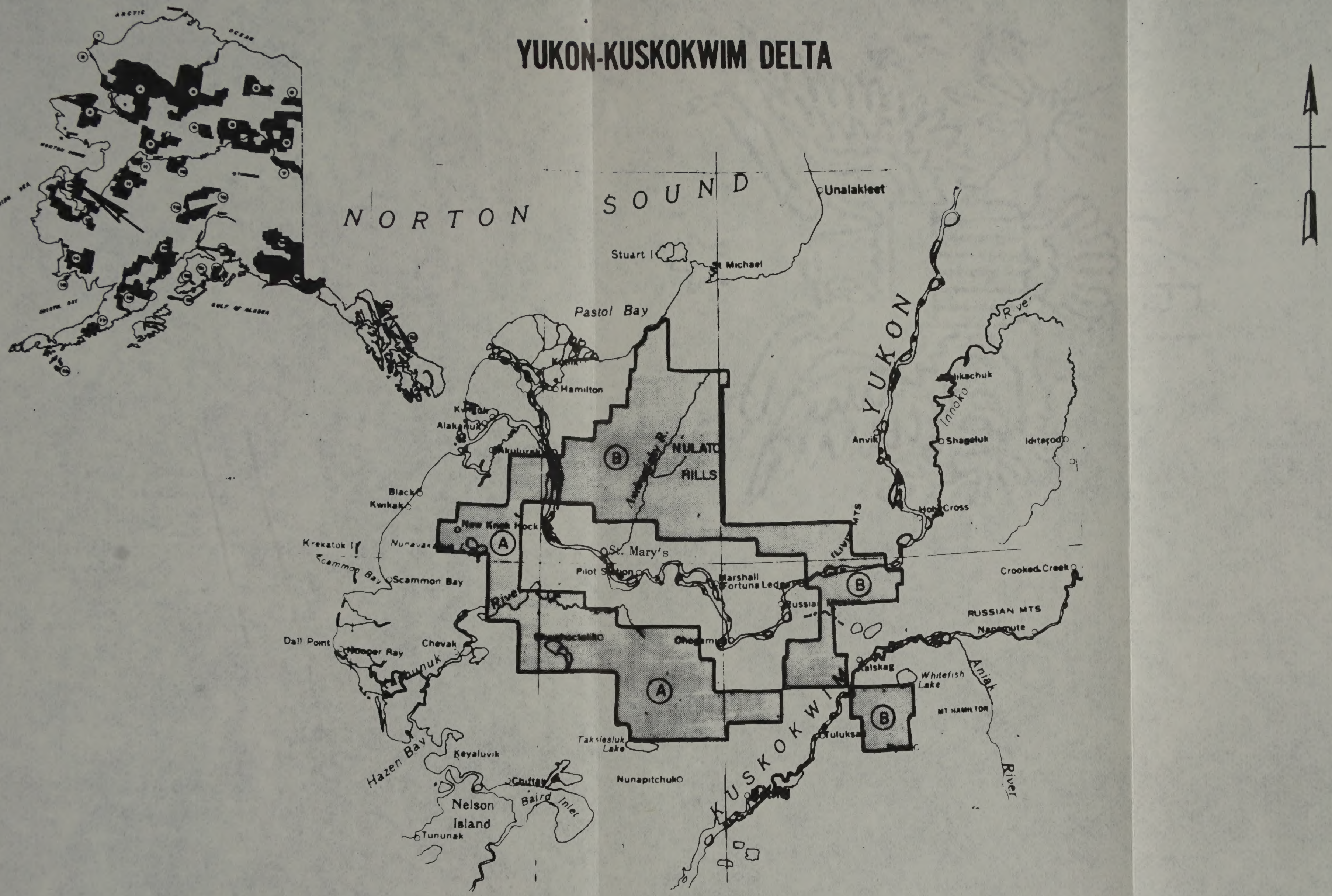
Findings - Area A and Area B

Primary access to both areas is via the Yukon and Kuskokwim Rivers and their tributaries. In addition, there are many airstrips and facilities for seaplanes at villages and fish camps on the periphery of the area. Winter travel is chiefly by snowmobile and light plane. There is an existing transportation route between the Yukon and the Kuskokwim Rivers in the vicinity of Paimiut Portage (see map).

Recommendation

The existing transportation route should be studied for possible development as a transportation corridor.

YUKON-KUSKOKWIM DELTA

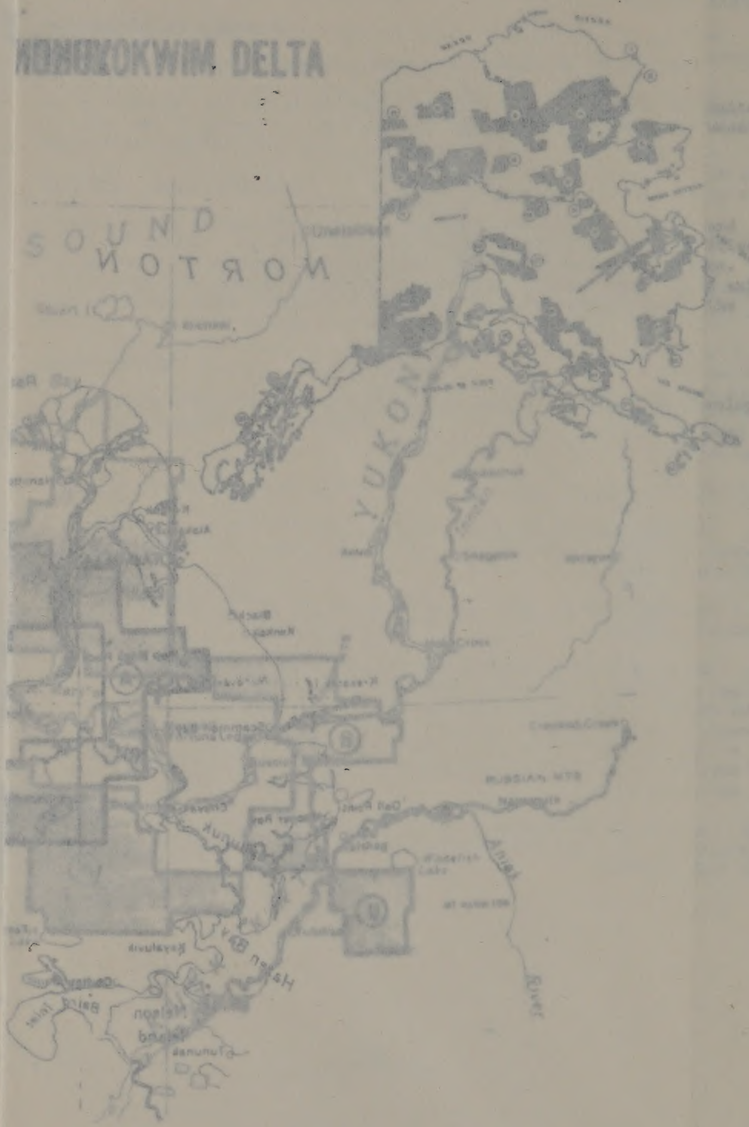


USE RECOMMENDATIONS

Symbol	Description	Acreage
A	Waterfowl Habitat— Southwestern Area	2,797,000
B	No Primary Use— Northeastern Area	2,555,000

SCALE: 1 IN. = 40 MI.

KUSKOKWIM DELTA



USE RECOMMENDATIONS

Symbol	Description
A	Waterfowl Habitat— Southwestern Area
B	No Primary Use— Northeastern Area

SCALE: 1 IN. = 20 MI.

MT. McKINLEY-NORTH

MT. McKINLEY-SOUTH

Area Description

The Mt. McKinley-North unit occupies part of the northern foothills of the Central Alaska Range, including those associated with the McKinley massif. Also contained within the unit are portions of the headwater lowlands of the Tanana and Kuskokwim Rivers. The withdrawal is adjacent to Mt. McKinley National Park.

The Mt. McKinley-South unit lies along the southern flanks of the Alaska Range and is characterized by rugged glaciated ridges, large glaciers, and swift braided glacial streams. The unit is an integral part of the Mt. McKinley massif. It is adjacent to both Mt. McKinley National Park and Denali State Park.

Findings

1. The northern unit provides important habitat for wildlife. Several species of large mammals, most notably wolf and grizzly bear, range back and forth between portions of this unit (see map--Areas A1 and A3) and Mt. McKinley National Park. The animals protected in the Park do not range to any extent into the outer reaches of the unit (see map--Areas C and D). With the exception of some caribou, sheep, and bear from Mt. McKinley National Park which range in significant numbers in the northeastern corner (see map--Area A1), the wildlife found in Mt. McKinley-South are not the same animals as those viewed in Mt. McKinley National Park. Hunting and trapping in most of the southern unit (see map--Area B), thus, would not have an adverse impact on the wildlife of the Park. Sport hunting under existing regulations of Dall sheep in the southwestern portion of the unit has occurred without known adverse impact on the lands.

2. The entire northern unit lies within a mineralized zone. Portions of the unit have a high potential for gold, antimony, silver, lead, and copper. Historically, significant mining has occurred in the Kantishna Hills and Stampede areas. A major mineral belt, the Chulitna-Yentna belt, extends along the eastern boundary of the southern unit. There are numerous mining claims of record in this belt. It has a high potential for copper, gold, silver, molybdenum, lead, and zinc. The Chulitna area in the northeastern corner of Mt. McKinley-South has particularly high potential, and in the Yentna district placer mining has produced $4.7 million in gold. A second metal zone with moderate to high potential for lead, zinc, silver, and copper is located in the northwestern corner of the southern unit.

3. Access to Mt. McKinley-North is currently limited to air with light planes landing on numerous unimproved air strips and lakes in and around the unit. Facilitation of transportation flow through Mt. McKinley National Park and access to the mining areas within the northern unit are needed. There is no ready access to an existing mining area in the far western reaches of the unit, except for some small unimproved airstrips.

Mt. McKinley-South is in relative proximity to the State's most densely populated areas around Anchorage and Fairbanks and to Alaska's major existing road networks. Surface access to the unit is most feasible from the south where topography is suitable for road construction. An existing road already extends to Petersville near the unit's southern boundary.

4. Mt. McKinley-South has high scenic value, relating in particular to views of Mt. McKinley and other high peaks of the McKinley massif, the Ruth Glacier, and Cathedral Spires.

5. The southern unit has high potential for recreational use. Most potential uses, e.g. hunting, winter sports, mountain climbing, of the unit are seasonal in nature.

6. The northwestern portion of Mt. McKinley-North is lightly used for hunting, fishing, trapping, and taking of other renewable resources for subsistence purposes by residents of six nearby communities. The total population of these communities is 250. Three trappers of long standing still trap in the western half of the unit (see map--Area A3).

Recommendations

1. All hunting should be prohibited in those areas designated "A" (A1 and A3) on the map. Any other uses which would have an adverse impact on the wildlife of the area should not be permitted.

2. Mining should be allowed under a permit and lease system in areas designated "A1" and "B" on the map.

3. Mining should not be permitted in the area designated "A3".

4. Fishing, hunting, and trapping should be allowed under State regulations in consultation with the appropriate Federal agency in those areas designated "B". Trapping should be allowed in Area "A3" only on the basis of grandfather rights.

5. Mt. McKinley-South should be developed for recreational use with sites and facilities along its southern boundary. An additional area southeast of the unit withdrawn under Section 17(d)(1) of the Settlement Act is also recommended for possible placement of recreational facilities.

6. In Mt. McKinley-South, access by aircraft and surface means should be allowed with appropriate restrictions.

A line of access (identified as "A2" on the map) providing a connecting link between the existing road in Mt. McKinley National Park and a transportation route to McGrath, once such a route is established, should be permitted. Should a transportation route crossing minor portions of the unit along the northern boundary be found environmentally preferable to other routes, access should be provided along the northern boundary to the unit for this purpose. When the proposed transportation and access routes are developed, the existing road within the Park should no longer be open to commercial use. In Area C, transportation facilities such as airfields and access roads should be allowed, subject to the appropriate environmental restrictions.

7. A variety of uses should be allowed in Areas C and D for which no primary use has been identified.

Area Description

This unit is located on the north side of Bristol Bay. It extends approximately from Kuskokwim Bay on the west to the Wood River/Tikchik Lakes area on the east. Most of the withdrawal consists of low rolling mountains with clear-water streams and lakes.

Findings

1. The Togiak unit, while not possessing outstanding or unique features itself, is adjacent to one of the most scenic areas of the State, the Wood River, and Tikchik Lakes area. Study currently is being conducted by the State to the designation of this area as a State park.

2. Hunting, fishing, trapping, and the taking of other renewable resources by residents of six nearby villages for subsistence purposes is the major current use of the unit.

3. The unit has excellent salmon and rainbow trout streams. Five species of salmon are found in the unit. Salmon is the most important food item in the largely subsistence economy of the communities near this unit. Other important food fish are grayling, herring, pike, sheefish, smelt, and tomcod. A State fisheries research station is located at the outlet of Togiak Lake, and five other sites have been identified by the State for research and management stations.

4. Brown bear are common in the unit, and wolverine roam throughout. Between 1,000 and 2,000 beaver are taken during good trapping seasons. Moose, caribou, and wolf are also present.

5. The Togiak River is currently used by residents of communities surrounding the unit as a transportation artery. There are many cabins along the banks, and the River and surrounding lands are areas of high activity for subsistence purposes. The River has potential for recreational boating. It is currently under study for Wild and Scenic River classification.

6. The entire unit lies in a mineralized belt identified for antimony, gold, and mercury. The southwestern portion of the unit lies in a second metal province chiefly favorable for platinum. The only placer mining for platinum in the Nation is in an area around Goodnews Bay adjacent to the unit's southwestern boundary. There are a number of active mining claims, primarily in the northeastern and southwestern portions of the unit.

7. Deposits of sand and gravel are found in the lower stream valleys.

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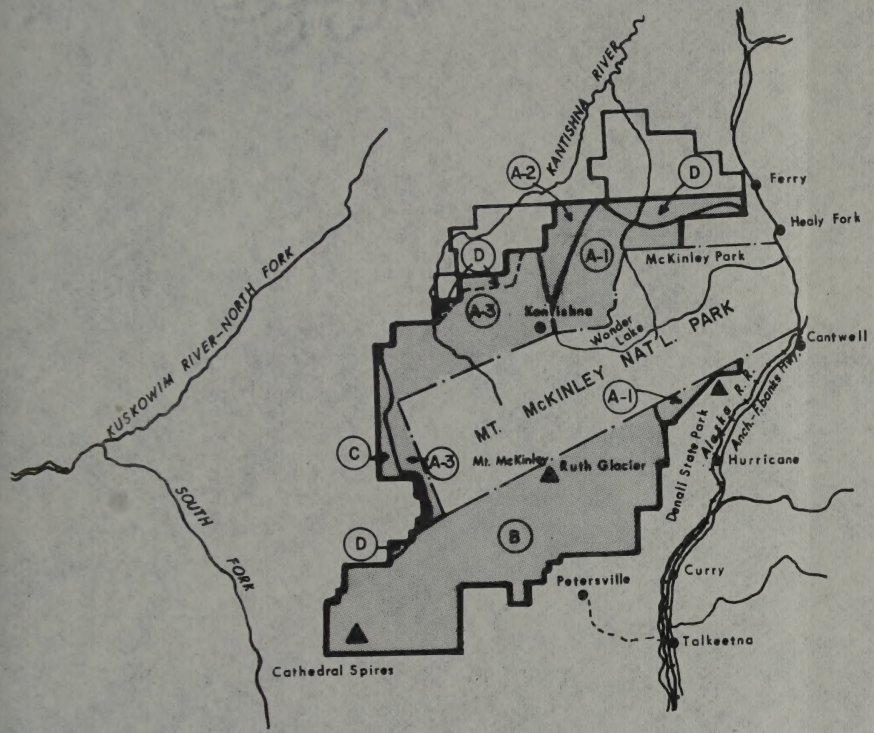
MT. McKINLEY



USE RECOMMENDATIONS

Symbol	Description	Acreage
A	No Hunting	1,189,000
A-1	Mining Permitted	588,000
A-3	No Mining	601,000
A-2	Access Route	
B	Hunting and Mining	1,677,000
C & D	Variety of Uses—(Airfields & Access Specifically Recommended for Area C)	184,000

SCALE: 1 IN. = 40 MI.

8. The tundra cover of most of this unit makes it suitable for reindeer grazing. It is estimated that the unit could support up to 9,000 reindeer.

9. Access to the unit is by air or boat. Several airfields are located on the periphery of the unit.

10. An area in the vicinity of Togiak Lake has been nominated as an ecological reserve for its shrub ecosystem, which is representative of the valleys in the area.

Recommendations

1. The portion of the unit adjacent to the Wood River/Tikchik Lakes area (see map--Area A), should be used for recreational purposes. Development of recreational sites should be permitted. Management of this portion of the unit and the State-owned Wood River/Tikchik Lakes area should be unified. Discussions between the State and Federal governments to this end should be undertaken.

2. Continued hunting, fishing, trapping, and taking of other renewable resources should be allowed.

3. Mineral exploration and extraction should be allowed under a permit and lease system.

4. Extraction of sand and gravel should be allowed when such extraction would not have an adverse impact on fish and wildlife.

HAGEMEISTER ISLAND

Area Description

Hagemeister Island is a relatively small island in Bristol Bay east of Cape Newenham. It is mostly mountainous with a coastline of cliffs and sand and gravel beaches. A 5-1/2-mile spit, noted for its symmetry, extends from the west side of the island.

Findings

1. A large sea bird colony and a hauling area used by approximately 150 Stellar sea lion are found at Calm Point. The population of the sea bird colony is around 100,000 and includes black-legged kittiwakes, common and thick-billed murres, and pelagic and red-faced cormorants.

2. Reindeer currently graze under lease on the Island. The carrying capacity is estimated to be 1,000 head, and the current population of the reindeer herd is approximately 450.

3. The Island is part of a metal province favorable for gold, mercury, and antimony.

4. Residents of two villages on the mainland hunt and gather other renewable resources on the Island for subsistence purposes. In particular, residents depend upon the Island's reindeer to meet their subsistence needs.

5. Access to the Island is presently limited to boats in the summer and over-ice travel in the winter. The Island's coastline may contain sites feasible for harborage.

Recommendations

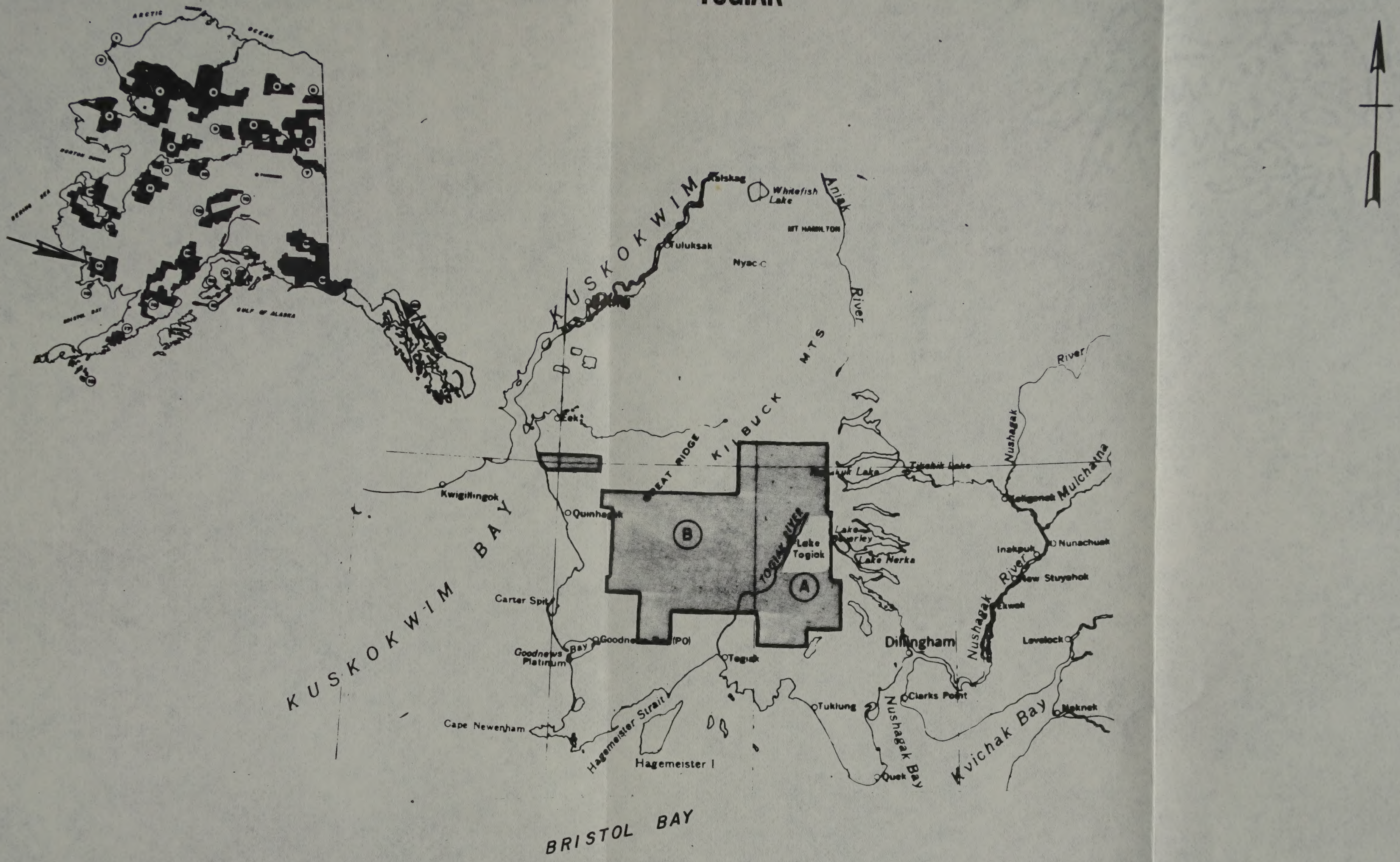
1. No use should be allowed that might have a detrimental effect upon the sea bird colony and the sea mammal hauling area in the vicinity of Calm Point (see map--Area A).

2. Reindeer grazing should continue under appropriate management.

3. Mineral exploration and extraction under a permit and lease system should be allowed on the Island except in the area around Calm Point.

4. The coastline should be studied for identification and evaluation of potential sites for harbor development. No sites in the vicinity of Calm Point should be taken under study.

TOGIAK

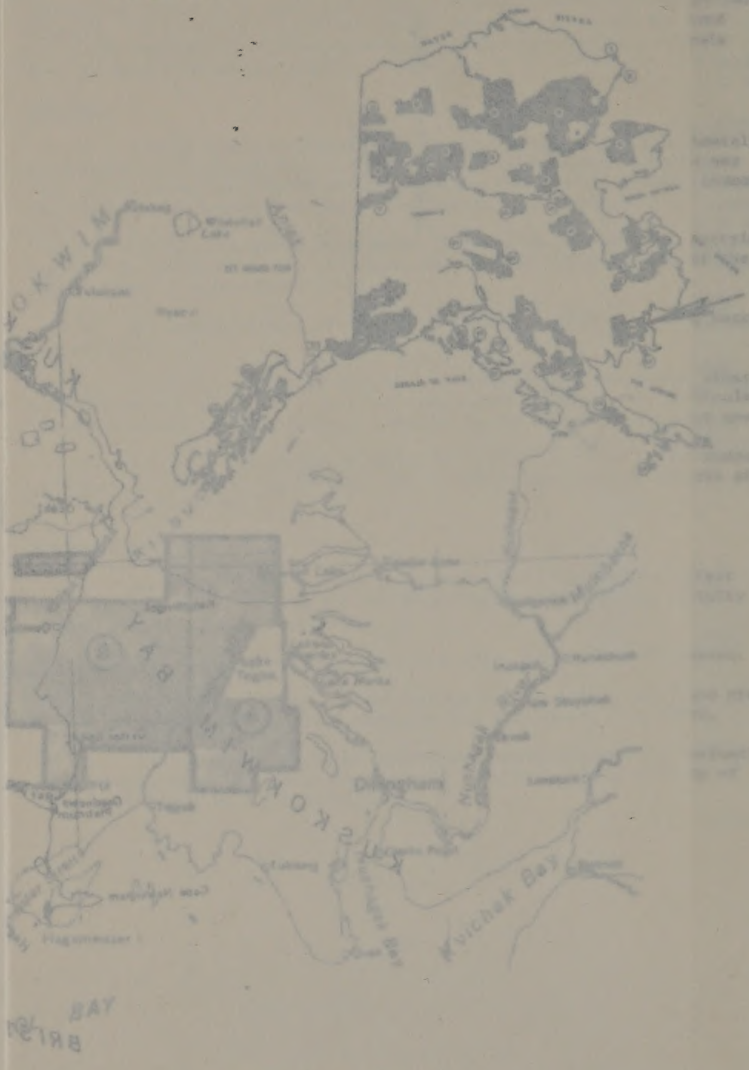


USE RECOMMENDATIONS

Symbol	Description	Acreage
A	Recreational Area	770,000
B	Balance of Unit	2,062,000

SCALE: 1 IN. = 40 MI.

TOGIAK



USE RECOMMENDATIONS

Symbol	Description	Acreage
A	Recreational Area	770,000
B	Balance of Unit	2,082,000

SCALE: 1 IN. = 48 MI.

Uses for reindeer grazing and for protection of sea bird and walrus habitat are compatible because of natural spatial distinctions in their respective use areas. Mining, provided that there is not extensive disturbance to the tundra cover, is compatible with reindeer grazing. The study and possible development of harbors should be conducted in locations and in a manner that does not conflict with other uses.

SHUMAGIN ISLANDS

(Bird Island and Chernabura Island)

Area Description

This unit consists of two outlying islands within the Shumagin Island group located off the southern side of the Alaska Peninsula. The islands are treeless and mountainous with many estuaries indenting their steep coasts.

Findings

1. The primary value of this withdrawal is as habitat for sea birds and sea mammals.

Bird Island is an important nesting area for sea birds. The Island supports about 1 million sea birds including black-legged kittiwakes, common murres, tufted puffins, horned puffins, and pelagic cormorants. It also provides habitat for bald eagle.

Chernabura Island has little value for sea birds, but there are dense populations of sea lions. As many as 2,000 have been seen at one time on the rookery and hauling grounds of the Island.

2. Residents of nine communities hunt, fish, and gather other renewable resources on these islands and in the surrounding waters for subsistence purposes. The more important species taken for subsistence are halibut, salmon, shellfish, and ducks.

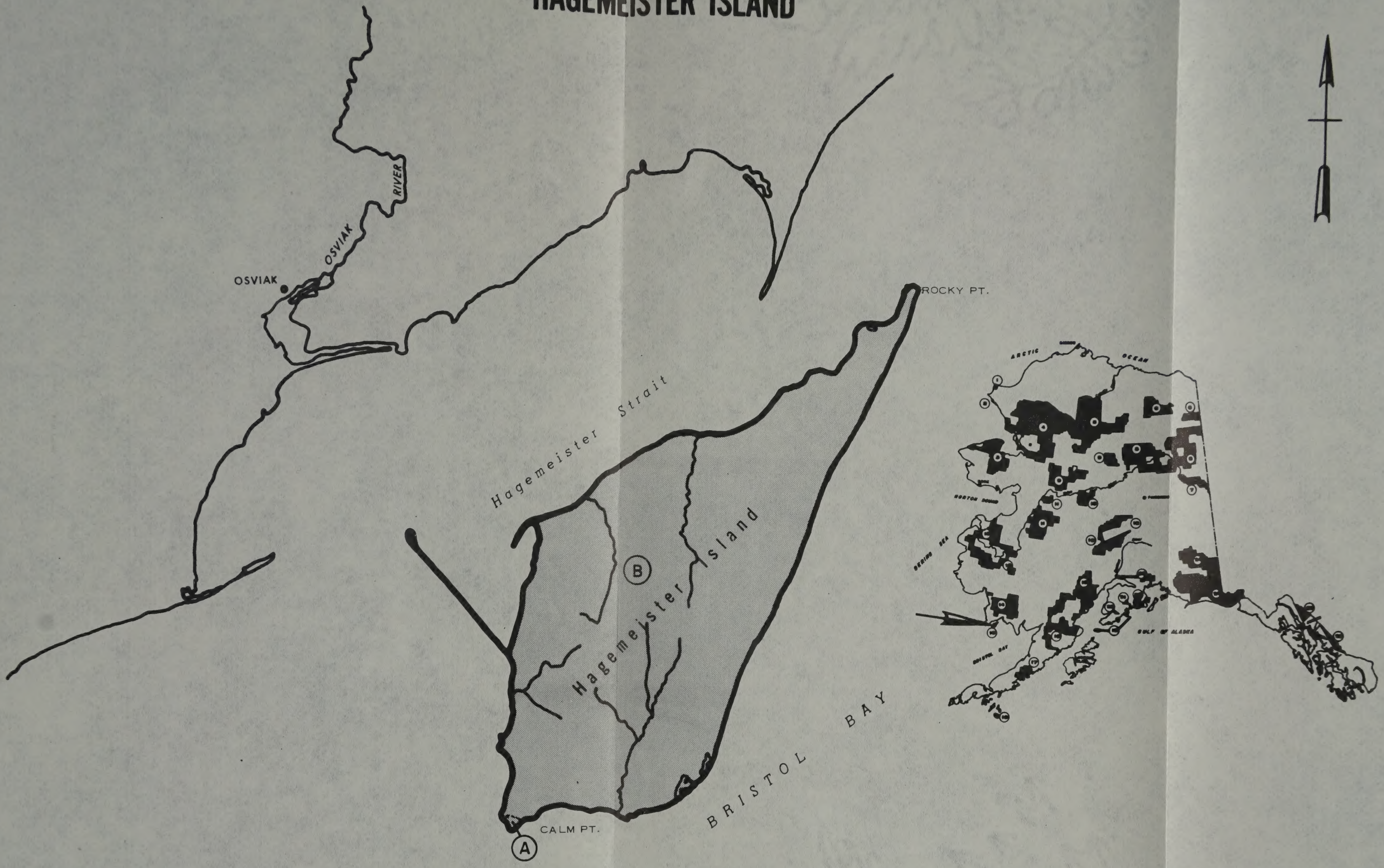
3. The waters near Shumagin Islands are one of the State's richest shrimp areas.

4. Both islands have good year-round grazing potential for cattle with a carrying capacity of approximately 40 acres per head. They are currently under grazing leases that will terminate in the 1980's. The cattle do not graze along the shore where sea birds and sea mammals are concentrated.

5. Potential for petroleum possibilities and other leasable minerals is not favorable.

6. Very little is known about the prehistory of the area. However, because of their geographical location the islands are probable locations of prehistoric habitation and archaeological deposits.

HAGEMEISTER ISLAND



USE RECOMMENDATIONS

Symbol	Description	Acreage
A	Calm Point Area	1,000
B	Balance of Unit	76,000

SCALE: 1 IN. = 250,000 FT.

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USE RECOMMENDATIONS

Symbol	Description	Acreage
A	Calm Point Area	1,000
B	Balance of Unit	76,000

SCALE: 1 IN. = 250,000 FT.

7. The only feasible form of access is by boat or seaplane. There are no existing or proposed communication facilities within this withdrawal.

Recommendations

1. The withdrawal should be used primarily as a habitat for sea birds and sea mammals. Any other uses potentially deterimental to this habitat should be carefully regulated.

2. Continued hunting, fishing, and the taking of other renewable resources should be permitted.

3. Cattle grazing should be allowed.

4. Archaeological exploration and excavation should be permitted.

ANIAKCHAK CRATER

Area Description

The Aniakchak unit is located on the Alaska Peninsula. It extends along the Pacific Coast from Kujulik Bay to Ambler Bay, and to the west and north crosses the Aleutian Range in the Bristol Bay lowlands. The Aniakchak Crater is a 30-square-mile volcanic caldera with cinder cones, fumaroles, a lake, colorful formations, and hot springs. Mountain peaks in this area vary from 2,000 to 4,000 feet in elevation.

Findings

1. The unit remains in its natural state and offers scenic values of good to high quality. Its geological features are primarily related to volcanism and are relatively unique. Aniakchak Crater is a designated national natural landmark (see map--Area A). Low-lying fog obscures the volcano for many days of the year.

2. The coastal area of the unit is prime habitat for brown bear. The bears are present along the streams of the unit during salmon runs and in herbaceous meadows during the spring. The Alaska Peninsula, of which this unit is a part, produces some of the world's largest moose. The population density of moose is high. In several past summers 6,000 to 8,000 migrating caribou have been observed in the northeastern corner of the unit. Sea otter are found in large numbers along the unit's coastline. Although hunting is presently the major activity in the unit, the impact on the wildlife population has been light.

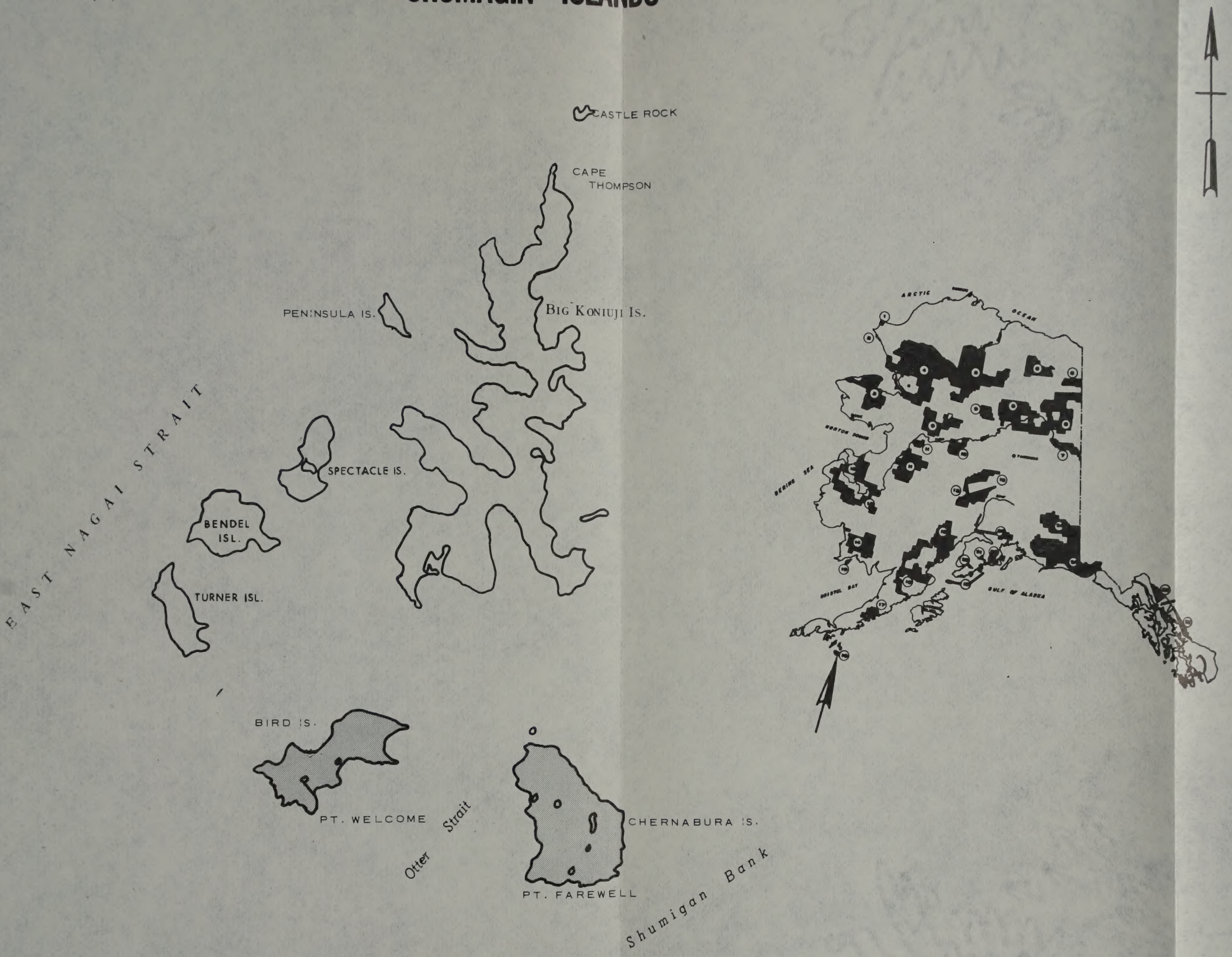
3. The streams within the unit contain runs of king, silver, chum, pink, and red salmon. Other fish are grayling and Dolly Varden trout.

4. Weather factors, the geographical remoteness of the unit, and limited access constitute limitations on recreational uses of the unit. Tourism at present is virtually nonexistent except for sport hunting. Visitors use is likely to remain low.

5. Currently, access to the unit is by boat or air. There are three developed landing sites (Mother Goose Lake, Port Heiden, and Chignik) near the periphery of the unit. Light aircraft can land within the unit on primitive landing strips, coastal beaches, lakes, and rivers. Rivers provide a means of access for boats from both the Bering Sea and the Pacific Ocean.

6. Potential for petroleum is high in a 400-square-mile area extending inland from the Pacific coast (see map--Area B).

SHUMAGIN ISLANDS



Total Acreage	10,950
Bird Island	4,300
Chernabura Island	6,650

SCALE: 1 IN. = 250,000 FT.

7. The unit has high potential for geothermal power. Insufficient funding has precluded a full evaluation of the potential. If tapped, the power generated would be a considerable distance from locations where it could be utilized.

8. A mineralized area of high potential has been identified in the six southernmost townships of the unit (see map--Area C). This area, where there are many existing mineral claims, has high potential for gold, silver, lead, and zinc.

9. The Aniakchak River is in its natural state and is currently under study for Wild and Scenic River classification. It has potential for recreational boating, sightseeing, and sport fishing.

10. Aniakchak Volcano has been nominated as an ecological reserve for its value for scientific research related primarily to volcanism.

Recommendations

1. The Crater area should be used for nonintensive recreational use (e.g. sightseeing, hiking) and for scientific study (see map--Area A).

2. Hunting should be permitted in the unit, except inside the Crater and on its lip (see map--Area A).

3. Salmon spawning streams within the unit should be protected. Sport fishing should be allowed.

4. Oil and gas exploration and development should be allowed in the 400-square-mile portion of the unit extending inland from the Pacific coast (see map--Area B).

5. Mineral exploration and extraction should be allowed under a permit and lease system in the six southernmost townships of the unit (see map--Area C).

6. The geothermal potential of the unit should be evaluated.

7. The Aniakchak River should be used for those nonintensive recreational activities that do not have an adverse impact on the waters or the surrounding land.

LAKE CLARK

ILIAMNA LAKE

KATMAI NORTH AND KATMAI SOUTH

For planning purposes, the withdrawn land in this region was divided into five different areas, each with different resource values and physiographic characteristics.

These areas are shown on the attached map and have been considered as follows:

Area A - Mountainous coastal area.

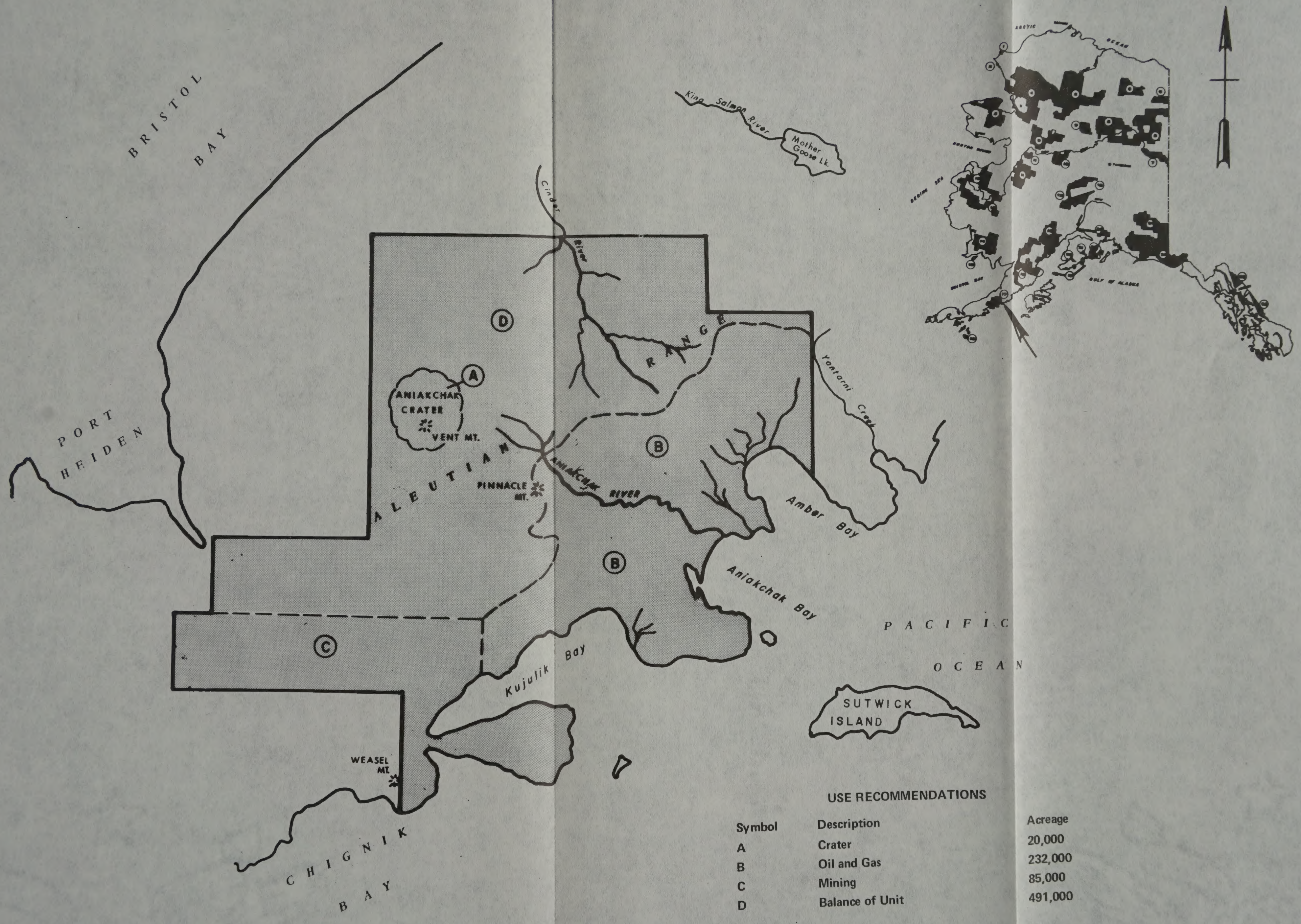
Area B - Salmon spawning area.

Area C - Land which adjoins and is physiographically similar to the Katmai National Monument.

Area D - Bear habitat.

Area E - Caribou and moose habitat.

ANIAKCHAK CRATER



USE RECOMMENDATIONS

Symbol	Description	Acreage
A	Crater	20,000
B	Oil and Gas	232,000
C	Mining	85,000
D	Balance of Unit	491,000

SCALE: 1 IN. = 500,000 FT.

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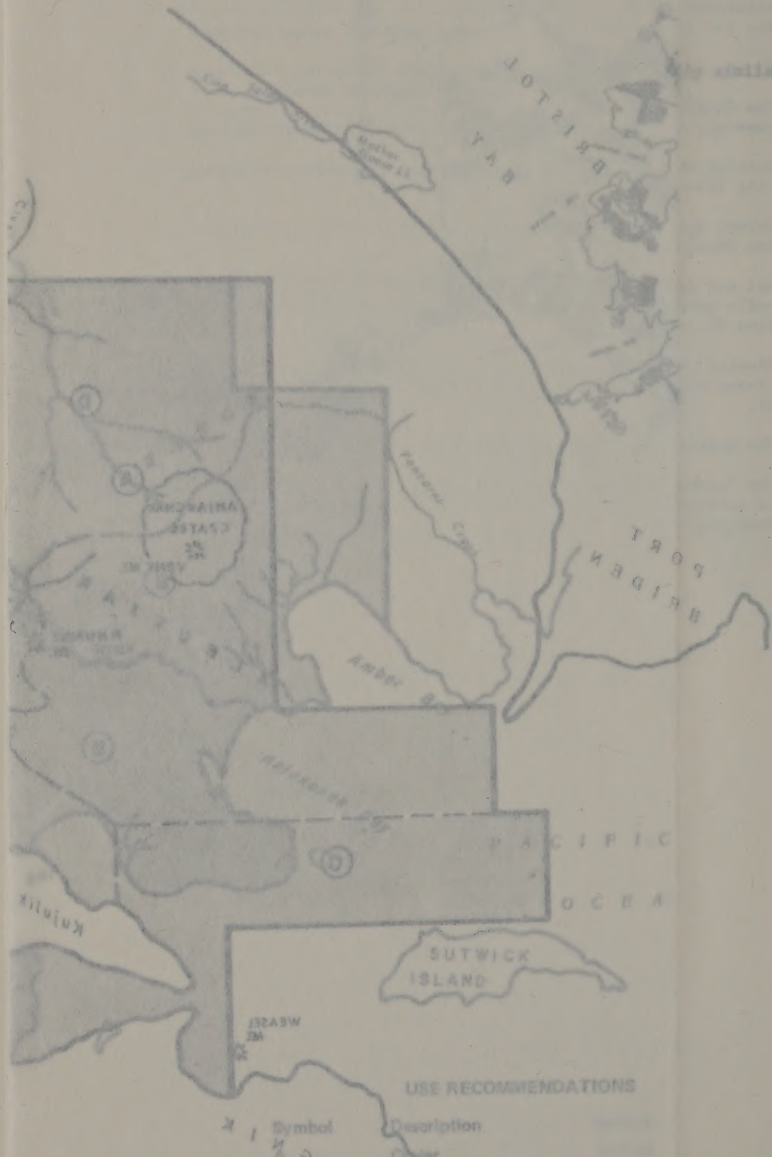
NIAK CRATER



USE RECOMMENDATIONS

Symbol	Description
A	Crater
B	Oil and Gas
C	Mining
D	Balance of Unit

SCALE: 1 IN. = 200,000 FT.

AREA A

Area Description

This area is the mountainous portion on the north of the Lake Clark withdrawal. Much of the area is characterized by the steep, glaciated slopes and snow-covered peaks of the Aleutian and Alaska Mountain Range. On the southeast, the area is bounded by Cook Inlet.

Findings

1. The scenic beauty of the natural features is the primary value of the area. The highly varied scenery includes rugged peaks and spires, beaches and bays, forests, and lakes of all sizes. Iliamna and Redoubt volcanoes, both slightly over 10,000 feet, dominate the landscape on the Cook Inlet side of the range. Other special scenic features are the glacially carved valleys and the numerous hanging glaciers in the vicinity of Lake Clark pass.

2. The area contains a rich variety of wildlife including sheep, moose, caribou, wolf, wolverine, brown bear, and exceptionally large concentrations of black bear. There are sea bird colonies at Tuxedni Bay and nesting habitat for bald eagles and peregrine falcons along the Cook Inlet coast. Harbor seals are often seen along the coast, and clam beaches in the area offer a popular recreation opportunity.

3. The area's potential for recreational use is enhanced by its proximity to Anchorage; much of the area can be reached by small plane in a 1-hour flight. Increasing incomes and leisure time will stimulate recreational demands in this once remote area.

4. Access to the area is currently by small plane or boat. Several elongated mountain valley lakes provide landing sites for floatplanes. Tuxedni Bay offers the only well-sheltered harbor in the area. Three potential land access routes to the area under consideration by the State Department of Highways as surface transportation and utilities corridors are: (1) along the Cook Inlet coast; (2) from Cook Inlet through Lake Clark Pass to Iliamna; and (3) from Cook Inlet through Merrill Pass to the west.

5. With the exceptions of iron deposits that have been studied at Tuxedni Bay and some evidence of potential for iron on the western side of the mountain range, mineral potential is unknown due to lack of evaluation.

6. Areas of recent volcanic activity near Mt. Iliamna and Mt. Redoubt have potential for geothermal development.

7. Much of the area has had very little use by man and remains largely in its natural state. Use of the resources for subsistence purposes in this area is relatively low. Sport hunters, sport fishermen, and people who fly into the area from Anchorage to enjoy its scenic recreational opportunities are not currently numerous.

Recommendations

1. Any use of the land should be conducted in a manner that does not significantly alter its natural features.

2. Recreational development should be permitted, but limited to avoid overcrowding and excessive use and designed to disperse entry. Some trails, shelters, landing facilities for small aircraft, and similar development will be necessary to enable access and use for recreational purposes. The location and nature of such development should be planned so that a minimum of manmade facilities are required. Selected areas for reservation entirely in their natural state should be identified.

3. Permanent residential settlement of public lands should be prohibited.

4. Hunting and fishing for subsistence and sport purposes should be permitted. Public agencies should be permitted to conduct activities designed to rehabilitate, develop, and enhance the fish and wildlife habitat.

5. North of Lake Clark Pass (see map--Area-A1) mineral exploration and extraction should be allowed under a permit and lease system. South of Lake Clark Pass (see map--Area A-2) mineral exploration for scientific and inventory purposes should be allowed under a permit system.

6. Timber cutting, except for subsistence purposes, should be prohibited.

7. Study of the geothermal potential near Mt. Redoubt and Mt. Iliamna should be permitted.

8. Any surface transportation in the region should be carefully designed to provide opportunities to enjoy the scenery while minimizing alteration of the natural features.

AREA B

Area Description

Most of this region is flat to moderately rolling tundra, broken by streams, ponds, and lakes. Iliamna Lake, the dominant feature of this region, is the seventh largest lake in the Nation.

Findings

1. The primary value of this area is the habitat for anadromous fish. Salmon spawning in the clear streams and lakes that feed into the Lake Clark-Iliamna complex account for much of the famed Bristol Bay salmon runs.

2. The large lakes and the availability of trophy-sized rainbow trout have given the region an international reputation among sport fishermen.

3. The area's proximity to Anchorage, in combination with its many recreational opportunities, is creating a demand for private ownership and development of the lakefront land surrounding Iliamna Lake. The withdrawal comprises approximately one-quarter of the Iliamna Lake frontage. The remainder is privately owned or withdrawn for Native village selection.

4. The area contains abundant and varied wildlife, principally moose, brown bear, and waterfowl. Big game hunting occurs throughout the area.

5. The withdrawal surrounds lands that have been withdrawn for selection by the villages of Nondalton, Iliamna, Newhalen, Igiugig, Pedro Bay, and Kakhonak. As evidenced by testimony at public hearings, people from these villages depend heavily upon the resources of this area to meet their subsistence needs. There is potential for conflict between fishing, hunting, and taking of other renewable resources for subsistence purposes and recreational development and uses of the land.

6. The northern part of this area is within a metal province which is considered favorable for gold, copper, lead, and silver. A second metal province near Cook Inlet is considered favorable for iron and titanium. The southern reaches of the withdrawal are within the Nushagak oil and gas basin, which has high potential for development.

7. The land transportation route from Iliamna Lake to Pile Bay has been used historically as the connection between the Bristol Bay drainage and the waters of Cook Inlet. This route is under consideration for development as part of the State's interconnected surface transportation system. At the public hearings held by the Commission in the region, residents spoke in opposition to the surface transportation connection. They felt that convenient access from Anchorage would result in population pressures that would jeopardize the resources on which they depend for much of their livelihood.

8. Minor portions of this region have potential for agricultural development and for timber harvest. Commercial utilization of either resource is unlikely in the foreseeable future.

9. The hydroelectric power site which has been inventoried at Twin and Lackbuna Lakes (Ingersoll Project) would have a relatively small flood basin and would be well located in relation to areas of mineral potential to the west. Dams inventoried at other hydroelectric sites within the area would cause extensive environmental damage.

10. Ownership of land in this region is divided along lines that are unrelated to the natural physiographic divisions and, particularly, to the region of anadromous fish habitat. Successful management of the fisheries resources will require cooperative planning and management by all the separate owners.

Recommendations

1. Further development along the shoreline of Iliamna Lake within the area should be prohibited. These lands should be protected in their natural state for public use and enjoyment. Any lakefront settlement and development should be confined on the lands currently withdrawn for Native selection or on lands which are already in private ownership.

A policy of providing special protection for the shoreline of the lakes, rivers, and streams should apply throughout the area in order to prevent environmental damage. Low density settlement and limited recreational development may be permitted on inland areas. Any private use of public lands should be on a lease basis.

2. Hunting and fishing should be permitted. Public agencies should be permitted to conduct activities designed to rehabilitate, develop, and enhance the fish and wildlife habitat.

3. Agriculture and timber cutting for subsistence purposes should be permitted. The location and nature of such activity should be carefully controlled to prevent erosion and possible damage to streams, lakes, and rivers.

4. Mineral exploration and extraction should be allowed under a permit and lease system designed to protect the habitat of the anadromous fish and freshwater fish.

5. The inventoried hydroelectric power site at Twin and Lackbuna Lakes should be studied for possible development. Other inventoried sites do not warrant further investigation at this time.

6. All transportation facilities in this region should be designed in such a way that impact on the fisheries resource is minimal.

7. In consideration of the best management of the fisheries resource and the fractured land ownership in the area, management should be coordinated with owners of adjacent lands. Possibilities of exchanges of land should be explored.

AREA C

Area Description

This area was delineated to define land that is physiographically integrated with the land within the Katmai National Monument. The area adjoins the Monument on its north, west, and south boundaries. It consists of low mountains on the west and the higher mountains of the Alaska Range on the east.

Findings

1. The primary value of the area is the scenic beauty of its natural features.

2. Resources of commercial value are relatively limited in this area. There is little or no commercial timber or agricultural lands. Eastern portions of this area are within an oil and gas province estimated to have moderate potential.

3. People from the villages to the west hunt, fish, trap, and take other renewable resources for subsistence purposes from this area.

4. Land adjacent to this area within the adjoining Katmai National Monument is being studied for possible wilderness classification.

Recommendations

1. Any use of the land should be conducted in a manner that does not significantly alter its natural features.

2. Recreational activites such as hiking and camping which have a minimal impact on the environment should be permitted.

3. Fishing, trapping, and taking of other renewable resources should be permitted. Hunting should be prohibited, except for subsistence purposes.

4. Scientific study should be permitted.

5. Mineral extraction should be prohibited.

AREA D

Area Description

This area of high brush and alpine tundra drains into Kamishak Bay and adjoins the State's McNeil Bear Refuge on the north and the Katmai National Monument on the south and east.

Findings

1. The primary value of this area is as habitat for wildlife, particularly for brown bear. The habitat in this area is important to the perpetuation of brown bear in the surrounding region. Some bear move between the coastal zone and the Naknek drainage through this area. There is some trophy hunting for large specimens of brown bear in this region.

2. The area is in its natural state. Significant alteration is unlikely. Access to the area is difficult at present, and there are no proposed highway corridors through this area.

3. The area has moderate to high scenic value.

4. The area is within a petroleum province considered to have moderate potential. A metal province favorable for gold, silver, copper, and molybdenum lies in the central part of the area.

Recommendations

1. Any use of the land should be conducted in a manner that protects the brown bear habitat.

2. Special restrictions on brown bear hunting should be imposed. Only hunting and fishing which are consistent with maintenance of the wildlife population and habitat should be permitted.

3. Mineral exploration and extraction, including oil and gas production, should be allowed under a permit and lease system.

4. Recreational activities that have a minimal impact on the land, such as hiking and camping, should be permitted.

AREA E

Area Description

This area encompasses a region of low rolling hills covered with moist tundra. It extends from the Naknek River drainage south to the drainages of the Becharof Lake system.

Findings

1. The primary value of this area is as habitat for caribou and moose. The area is part of the preferred winter range of the Alaska Peninsula's barren-ground caribou.

2. Hunting, fishing, trapping, and taking of other renewable resources for subsistence purposes in this area is vital to the livelihood of people in the nearby villages of Naknek and South Naknek. There is some sport hunting in the region; and, because the area is relatively accessible to the King Salmon military bases, there is a potential for conflict between hunting for subsistence purposes and sport hunting.

3. The area is relatively accessible by snowmobile from the Naknek-King Salmon highway. A surface transportation corridor through this region is under consideration by the State Department of Highways.

Recommendations

1. Any use of the land should be conducted in a manner that does not impair the important caribou and moose habitat.

2. Hunting and fishing which are consistent with protection of the fish and wildlife population and habitat should be permitted.

MINORITY REPORT FOR LAKE CLARK

We disagree with the recommendation of the Commission which provides for mining exploration and development in the northern half of the Lake Clark unit (see map--Area A-1). The subcommittee that originally studied this area redrew the outside boundaries of the unit to conform with hydrologic boundaries. This resulted in the exclusion of nearly all lands having either high or moderate mining potential. The remaining highly mountainous portions of the unit is in a primitive, untouched state, and the subcommittee recommended that any use of this entire area should be conducted in a manner that recognizes and protects the scenic beauty of its natural features. Mining exploration and extraction would be prohibited. On a very close 5-4 vote, the full Commission amended this subcommittee recommendation to allow mining in the northern portion of this unit.

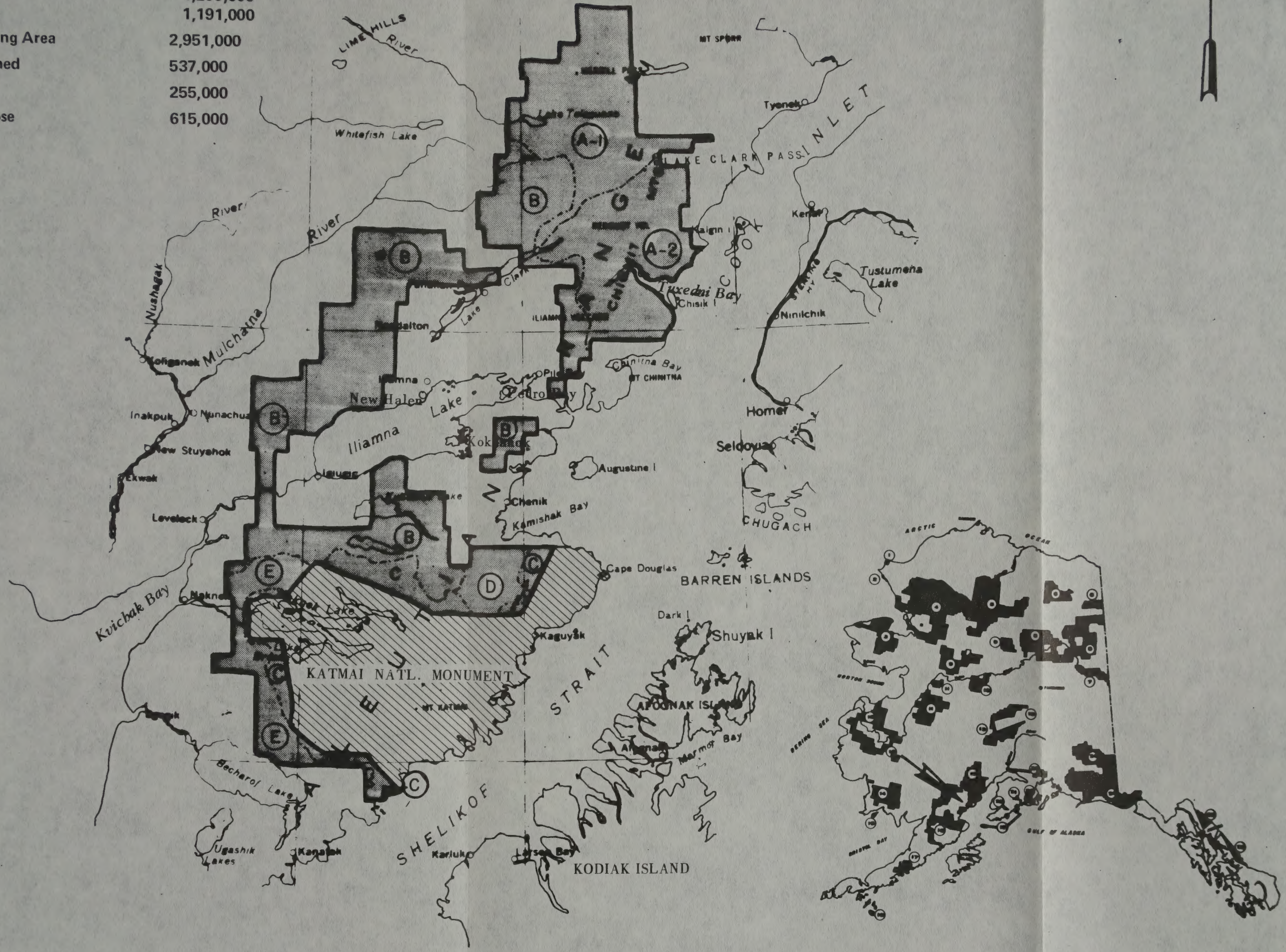
We do not believe sufficient additional information was presented to warrant this change. The area as originally proposed by the subcommittee represented a logical ecological unit for management purposes. The mineral potential is either negligible or unknown. But the scenic beauty and primitive recreational opportunities, in our view, are of overwhelming importance and should be protected in the national interest by eliminating mining and other noncompatible uses from the entire area.

Submitted by: Commissioners Cooley and Hunter

LAKE CLARK-KATMAI

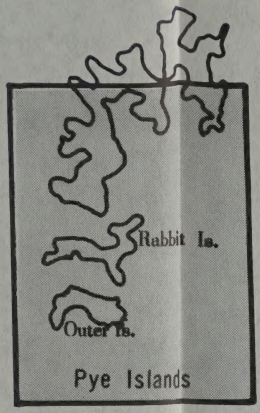
USE RECOMMENDATIONS

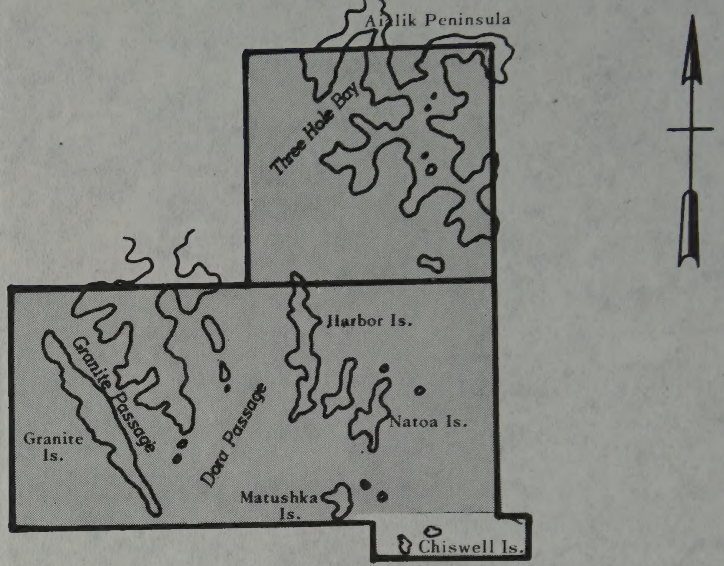
Symbol	Description	Acreage
A	Mountainous Area	2,391,000
A-1	Mining	1,200,000
A-2	No Mining	1,191,000
B	Salmon Spawning Area	2,951,000
C	Katmai Watershed	537,000
D	Bear Habitat	255,000
E	Caribou & Moose Habitat	615,000

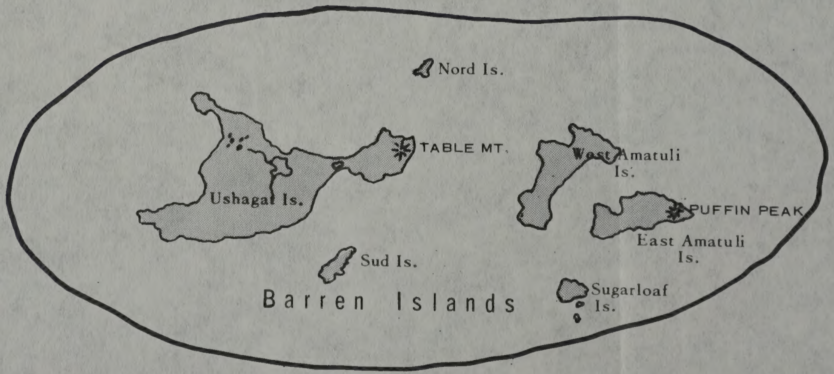


SCALE: 1 IN. = 40 MI.

KENAI PENINSULA ISLAND GROUP







Total Acreage	26,100
Barren Islands	10,500
Pye Islands	4,600
Granite-Chiswell Islands	6,000
Aialik Peninsula	5,000

SCALE: 1 IN. = 250,000 FT.

KENAI PENINSULA ISLAND GROUP

Barren Islands
Pye Islands
Granite-Chiswell Islands
Aialik Peninsula

Area Description

These withdrawals consist of three island groups in the Gulf of Alaska and the tip of a peninsula along the mountainous south side of the Kenai Peninsula. The units are rocky and windswept.

Findings

1. These units are primarily valuable for their sea bird colonies and the habitat they provide for raptor and marine mammal.

2. Important marine fisheries operate in the surrounding waters.

3. Salmon, shellfish, and herring roe are fished for subsistence purposes in the area. Hair seal and goats are hunted in the Chiswell Islands and on the Aialik Peninsula.

4. The units lie in a mineral province with a high potential for copper and gold. However, no deposits within the units are presently known.

5. Because of their geographical setting, the Islands are probable locations of prehistoric habitation and archaeological deposits.

6. Recreational opportunities are limited chiefly to wildlife observation, ocean fishing, and some hunting.

Recommendations

1. The withdrawals should be used primarily as habitat for sea bird and sea mammal. Any other use of the units should be carefully regulated to prevent damage to the wildlife habitat.

2. Continued hunting, fishing, and the taking of other renewable resources should be permitted.

3. Mineral exploration and extraction should be allowed under a permit and lease system.

4. Archaeological exploration and excavation should be permitted.

KENAI SOUTH

Area Description

This unit is located in the southern part of the Kenai Peninsula several miles inland from the head of Kachemak Bay and approximately 40 miles east of Homer. The area is bounded on the northeast by the Kenai National Moose Range, on the south by Native regional deficiency withdrawals, and on the west by State selected lands and one township in public domain around Bradley Lake. Most of the area is mountainous, with peaks ranging from 3,000 to 5,000 feet in elevation.

Findings

1. The unit is in its natural state. Because access is lacking, present use of the unit and the immediately adjoining areas is very limited.

2. The unit is within a mineral province with high potential for chromium and copper.

3. Though the unit contains valuable habitat for fish and wildlife, there has been very little fishing and hunting in the area.

4. The withdrawal has some cottonwood and white spruce in the Sheep Creek and Kachemak drainage. The timber is of minimal commercial value.

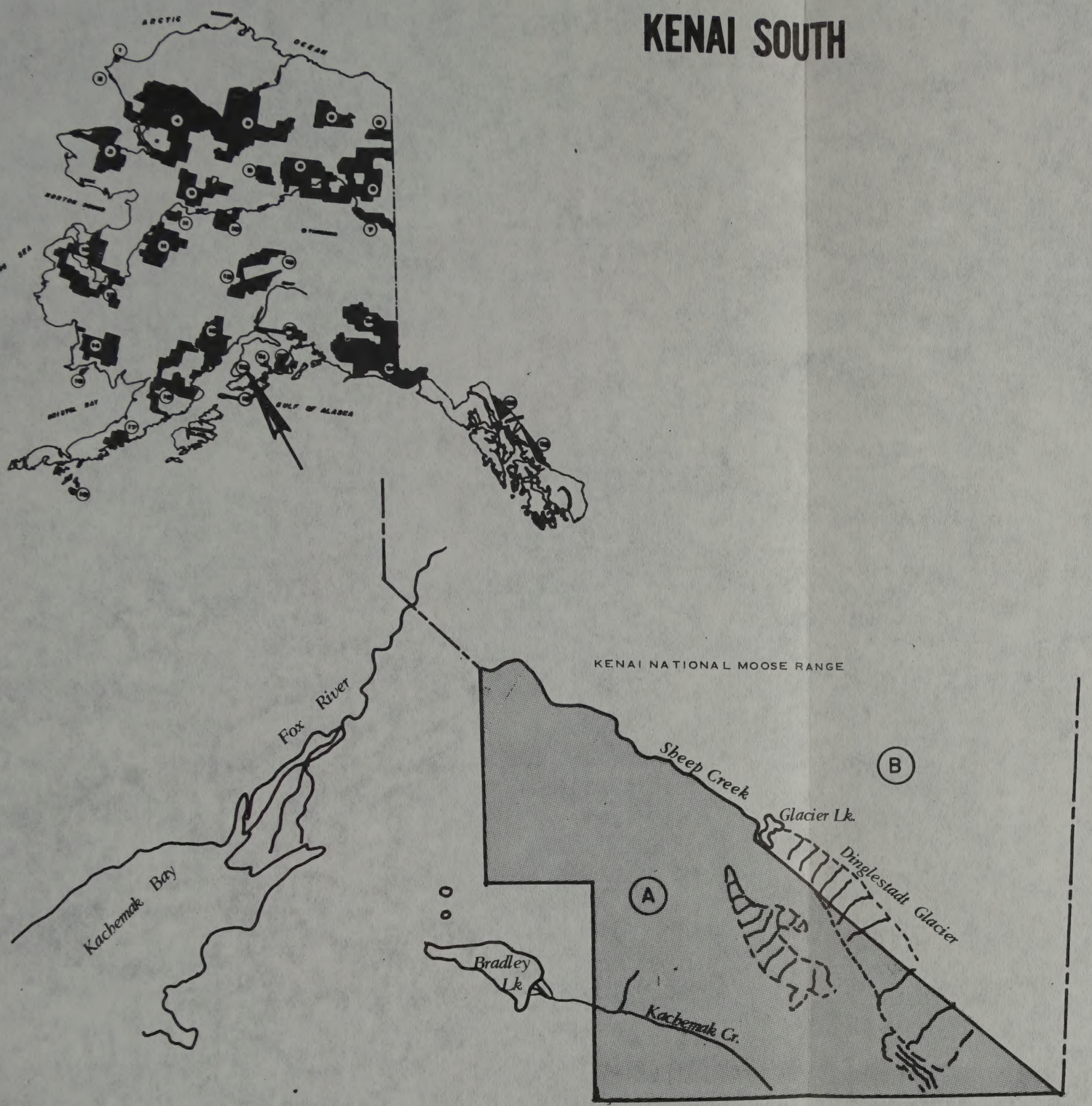
5. The Bradley Lake power project with an installed capacity of 94,000 kilowatts would flood about 4,000 acres of the Kachemak Creek drainage if it were developed. Currently, this project is approved but unfunded.

Recommendations

1. The Kachemak Creek drainage (see map--Area A) should be used for recreational purposes and, as necessary, for hydroelectric power production in connection with the Bradley Lake power project. The exploration for and extraction of minerals should be allowed under a permit and lease system.

2. The Sheep Creek drainage (see map--Area B) should be used in a manner which preserves its natural characteristics. Activities which would significantly alter the natural environment should not be allowed. Mineral exploration and extraction and timber cutting should be prohibited.

KENAI SOUTH



USE RECOMMENDATIONS

Symbol	Description	Acreage
A	Kachemak Creek Drainage	27,000
B	Sheep Creek Drainage	35,000

SCALE: 1 IN. = 250,000 FT.

Area Description

This withdrawal is located 10 miles west of Seward on the eastern side of the Kenai Peninsula. The north boundary is formed by the Resurrection River and borders Chugach National Forest lands. To the west is the Kenai National Moose Range; to the south the land is withdrawn for Native regional deficiency selection. Over half of the unit is covered by ice and glaciers of Harding Icefield and lies at an elevation of 4,000 feet. The lower lands in the Resurrection River Valley are heavily wooded.

Findings

1. Fish, wildlife, and migratory birds are found in the lowlands of the unit. The Resurrection River has a significant run of silver and chum salmon. Moose, wolverine, wolf, black bear, and goat are the primary wildlife.

2. Recreational opportunities in the Resurrection River Valley include sport fishing and hunting. Recreational use currently is light.

3. The Icefield is stable. If access were developed, there would be good year-round opportunities for cross-country skiing and snowmobiling on the Icefield. Access to the Icefield for these recreational purposes would probably require construction of an aerial tramway. One to the Harding Icefield from Resurrection River has been proposed.

4. There is presently no access to the withdrawal. However, a road is under construction through the Resurrection River Valley on the National Forest lands adjoining this unit. This road will provide access to the eastern boundary of the unit.

5. The unit is within a metal province with high potential for gold and copper. Deposits of lead, zinc, and silver may be present, as well.

6. Of the withdrawals on the Kenai Peninsula, this unit has the only accessible stands of timber of potential commercial use. The stands are located in the Resurrection River Valley.

7. The Harding Icefield has been nominated as an ecological reserve on the basis of its glacial features.

Recommendations

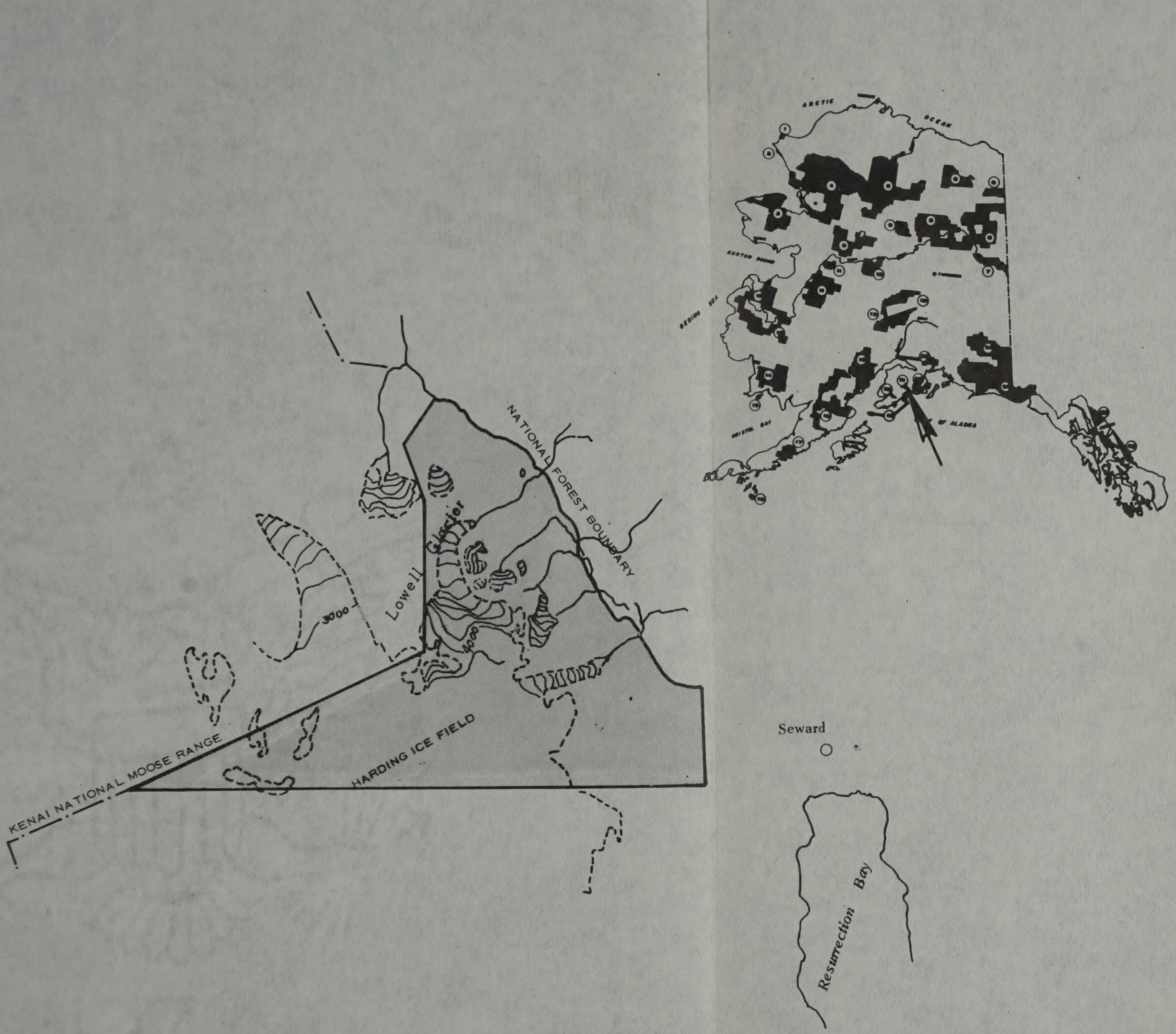
1. This withdrawal should be used primarily for recreation. Fishing and hunting should be permitted. Snowmobiling should be restricted to the Icefield. Proposals for access to the Icefield, e.g. the tramway from Seward, should be further studied and evaluated. Development of recreational facilities should be allowed if proposed facilities will not markedly detract from the scenic features and if no adverse impact on the fish and wildlife habitats can be assured.

2. Mineral exploration and extraction should be allowed under a permit and lease system.

3. Timber should not be harvested. Limited cutting may be allowed under permit for purposes of development of recreational facilities and road building.

4. Residential settlement should be prohibited.

HARDING ICE FIELD



Total Acreage 49,800

SCALE: 1 IN. = 250,000 FT.

NELLIE JUAN

Area Description

The Nellie Juan unit is located on the east side of the Kenai Peninsula 20 miles south of Whittier and 10 miles east of Seward. The withdrawal is bordered on the east, north, and west by the Chugach National Forest; on the south a strip of State selected land separates the unit from the Gulf of Alaska coast.

The massive Sargent Icefield and associated glaciers cover the eastern two-thirds of the unit. The Nellie Juan River Valley runs through the western third of the unit.

Findings

1. The scenic beauty of the natural features is the primary value of the Nellie Juan withdrawal. The Sargent Icefield with its snowclad peaks of 4,000 to 5,000 feet is the outstanding scenic feature of the withdrawal. The Nellie Juan River Valley and Lake add to the variety of the scenery in this withdrawal. Despite the unit's proximity to population centers, it remains in its natural state.

2. A 2,000 foot pass connects the Nellie Juan River Valley and the valley in which the Seward Highway is located. This pass offers a good opportunity for development of a hiking trail from the highway to Prince William Sound.

3. Because it is near growing population centers, there may be considerable demand for recreational use of this unit.

4. Trout and salmon are found in the clear streams and brown and black bear are numerous in the valleys. Goats are found on peaks around the Icefield.

5. There is some fishing for subsistence purposes in the Nellie Juan River. Portions of the unit are trapped.

6. The withdrawal is within a metal province considered to have high potential for copper and gold, with minor potential for lead, zinc, and silver.

7. The relatively few spruce trees that grow in the Nellie Juan Valley are valuable more for aesthetic purposes than for commercial use.

Recommendations

1. Any use of this unit should be carefully regulated to protect its scenic beauty. Uses of this unit should be planned in a manner that is compatible with uses of adjoining Federal and State lands.

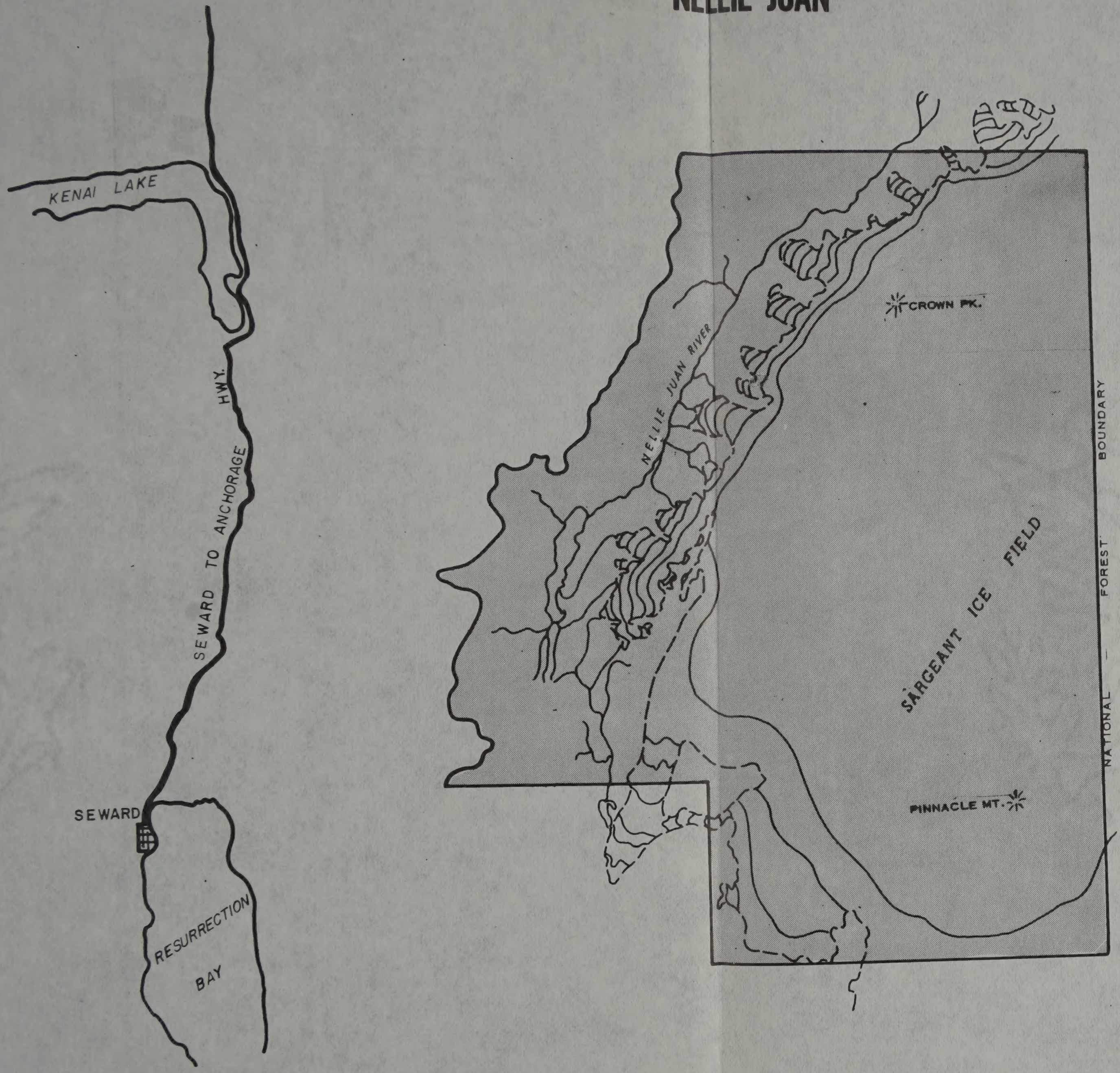
2. Recreational development should be permitted. To protect the scenic features of the unit, the nature of allowed uses, the level of use, and the number and location of facilities should be limited.

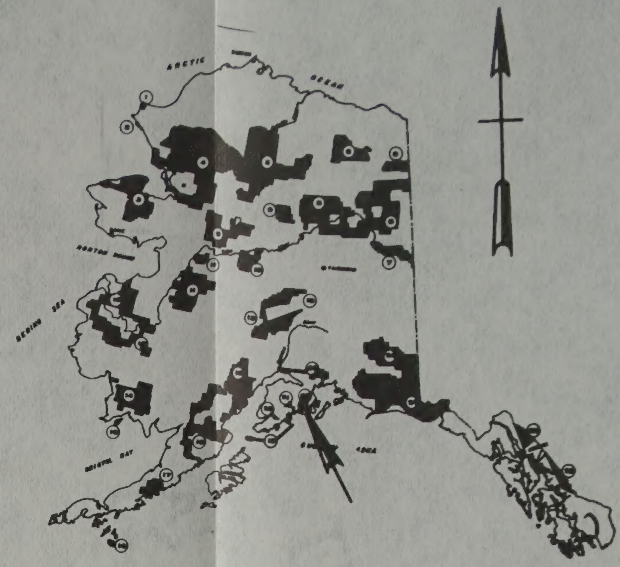
3. Hunting, fishing, and trapping should be permitted.

4. Mineral exploration and extraction should be allowed under a permit and lease system.

5. Residential settlement should be prohibited.

NELLIE JUAN





Total Acreage 276,400

SCALE: 1 IN. = 250,000 FT.

COLLEGE FIORD

Area Description

This unit located at the northwest extreme of Prince William Sound encompasses a region of spectacular mountains, glaciers, and fiords. College Fiord is the dominant feature of the withdrawal and the principal point of access into the area. From the Fiord there are outstanding scenic vistas of the long, sweeping Harvard and Yale glaciers and the unit's rugged coastline.

Findings

1. The scenic/recreational values of this unit are outstanding. It remains in its natural state.

2. The unit is located midway between Anchorage and Valdez, approximately 75 air miles from Anchorage. The proximity to a major population center gives this unit potential for recreational use. A moderate level of recreational use would require access and accommodations for people.

3. Wildlife in the unit include bear, goat, and sea mammals. Bald eagles are present, and a colony of sea birds is located at the head of College Fiord.

4. The withdrawal is within a metal province considered to have high potential for copper and gold, with minor potential for lead, zinc, and silver.

5. There are small stands of timber of commercial quality in the unit's coastal area.

Recommendations

1. The natural beauty of the region should be recognized as the dominant value. Any uses which could significantly alter the natural features should be carefully regulated.

2. Recreational uses of the area should be permitted, subject to controls designed to prevent overcrowding and to assure preservation of the scenery and wildlife.

3. Hunting and fishing should be permitted.

4. Mineral exploration and extraction should be permitted under a permit and lease system.

5. Commercial cutting of timber should be prohibited.

WRANGELL-CHUGACH MOUNTAINS

WRANGELL MOUNTAINS

Area Description

This unit extends westward from the Canadian border towards the junction of the Richardson and Glenn Highways and encompasses that portion of the Wrangell Mountain Range lying in Alaska. The unit is mostly mountainous with rivers flowing through valleys and sheer-walled canyons. The mountains within the unit include some of the highest and most massive in the State.

Findings

1. The scenic beauty of the natural features is the primary value of this unit. Outstanding scenic locations are: (1) the White River region, Russell Glacier, Skilai Pass, Chitistone Canyon, and the Nizina River Valley in the eastern part of the unit; (2) the areas centering around Mt. Drum, Mt. Sanford, and the Jacksina Canyon in the western part of the unit; and (3) Mt. Blackburn and its vicinity.

2. Portions of this withdrawal have a very high potential for mineral development. The Nabesna Valley in the north and the region along the southern boundary of the withdrawal extending westward into Canada have been identified as locations of large porphyry copper deposits of high potential.

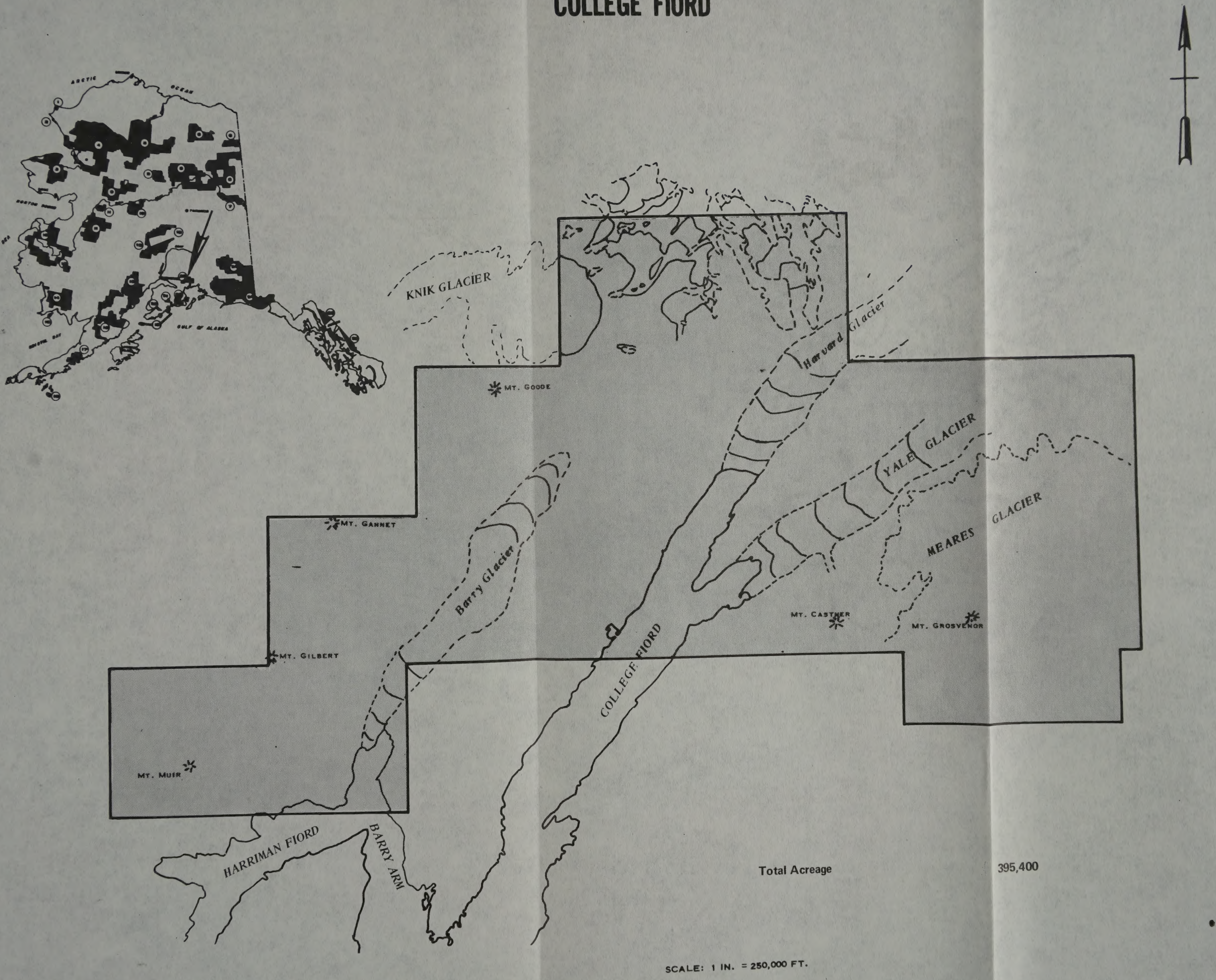
3. The Wrangells are known internationally as the prime location for sport hunting for Dall sheep of trophy caliber. There is also a wide variety of other wildlife in the region (particularly in the area east of Mt. Sanford) including moose, caribou, wolf, wolverine, mountain goat, and brown, grizzly, and black bear.

4. The volcanic mountains in the western part of the withdrawal are considered to have the highest geothermal potential in the State.

5. The region has a long history of habitation by Athabascan Indians. Early transportation and habitation corridors surround the Wrangells and cross the Range at Skolai Pass. The area has an interesting role in the history of copper and gold mining in Alaska. The old Kennicott mine structures have potential for preservation in interpretation as an historic site. Goat Trail, the historic route for Natives and for miners around the turn of the century, still exists across Chisistone and Skolai Passes.

6. Hiking, horseback, and small aircraft are the only means of access to much of the withdrawal. There are a number of small airstrips in the region. Approximately 60 percent of the sport hunters use aircraft for access into the mountains.

COLLEGE FIORD



Total Acreage	395,400

COLLEGE FIORD

SCALE: 1 IN. = 250,000 FT.

7. The southern boundary of the Wrangell Mountain withdrawal was determined, in part, through a court-approved agreement between the State of Alaska and the Secretary of the Interior. Lands adjacent to the Wrangell Mountain withdrawal to the north and south are withdrawn for classification under Section 17(d)(1) of the Act. Appropriate use of such lands is closely related to the use of the lands within the Wrangell Mountain withdrawal. For example, the entrance of the Chitistone Canyon is in the d-1 withdrawal, but the rest of the valley is in the d-2 withdrawal. The best location for viewing Mt. Blackburn, which is within the d-2 withdrawal, is from a site to the south in the d-1 lands. Such circumstances argue for consistent planning and management for both d-1 and d-2 lands in the Wrangell Mountain region.

Recommendations

1. Any use of the land should be conducted in a manner that does not alter the scenic beauty of the natural features.

2. Limited recreational development should be permitted. Some trails, shelters, landing facilities for small aircraft, and similar development will be necessary to enable access and use for recreational purposes. However, the location and nature of such development should be planned in such a way as to avoid significant alteration of natural scenic features and to minimize manmade facilities.

Selected areas should be reserved entirely in their natural state. Recommended locations for consideration as natural reserves are: (1) the region directly east of Mt. Sanford including the Jacksina Canyon, (2) the Chitistone Canyon, (3) the Nizina River Valley, (4) the Russell Glacier area, and (5) the White River drainage (see map--Area A).

3. Efforts should be made to preserve and highlight the cultural history of this region.

4. Permanent residential settlement of public lands within the unit should be prohibited.

5. Hunting for subsistence and sport purposes should be permitted in much of the unit. Prohibition of hunting is recommended in the areas east of Mt. Sanford and around the headwaters of the Chitistone and Nizina Rivers (see map--Area A1). These suggested closures are intended to become effective at such time as viewing of game assumes more importance than hunting of game. Continued trophy hunting for Dall sheep in prime sheep hunting areas should be allowed (see map--Area A2).

Fishing should be permitted throughout the withdrawal.

6. Mineral exploration and extraction should be permitted under a permit and lease system in the following areas: (1) in the mineral belt bordering the southern flank of the Wrangells between and including the drainages of the Kotsina River and McCarthy Creek, but excluding that area near the terminus of the Kuskuluna Glacier;and (2) in the Nabesna drainage south of Orange Hill (see map--Area B).

In the remainder of the withdrawal (see map--Area C) it is recommended that mineral development be prohibited, but that mineral exploration for scientific and inventory purposes be allowed under a permit system.

7. Evaluation of the geothermal potential around Mt. Drum and Mt. Sanford should be permitted.

8. Major access should be from routes located outside rather than through the withdrawal unit. Aircraft landing sites should be designated in accordance with overall planning for the unit.

9. The entrance to the Chitistone Valley should be incorporated into the use/management area for which the rest of the Valley has been designated, but mining under a permit and lease system should be allowed.

CHUGACH MOUNTAINS

Area Description

This withdrawal is the portion of the Chugach Mountain Range extending from the Kluane National Park in Canada to the Prince William Sound region. It also includes an area of coastal lowlands along the Gulf of Alaska and part of the extensively glaciated St. Elias Range, the highest coastal mountain range in the world. Approximately 75 percent of the withdrawal is comprised of extensively glaciated mountains. The Copper River Valley, which connects the Gulf of Alaska with interior lowlands, cuts through the western end of the withdrawal. Major scenic features are the Malaspina Glacier (which is larger than the state of Rhode Island) and Mt. St. Elias (18,000 feet in elevation).

Findings

1. The scenic beauty of the natural features is the primary value of this unit.

2. Nearly all the unit remains in its natural state.

3. The Copper River Valley supports a major salmon fishery. The Copper River produces more salmon than any one river flowing into the Gulf of

Alaska. The fishery is vital to the local population for both subsistence and commercial purposes.

4. The Bremner and Copper River Valleys are nesting grounds for the rare trumpeter swan. The Bremner River Valley is also of scientific interest because of the intermix of interior and coastal vegetation.

5. The unit has a history of early habitation by Athabascan Indians. The Bremner River Valley was once the home of the Bremner River people, a group of Indians who used the local copper as a medium of exchange and as a material for implements and ornaments. There are no human settlements within the withdrawal at present. West of the Copper River, four patents have been issued to private owners, including three homestead entrymen. Valley land west of the Copper River is an appropriate location for the occasional small centers of human settlement needed to serve people who travel through the unit or who visit the unit for recreational purposes.

6. The proposed Wood Canyon hydroelectric power site rates as one of the best in Alaska, in terms of low cost and high power potential; but its development would severely damage the Copper River Valley salmon runs and flood portions of the Copper and Chitina River Valleys to an elevation of 1,000 feet. Habitat of trumpeter swan, bear, and other wildlife in the lower Copper River Valley would be jeopardized by changes upstream caused by the dam.

7. The Copper River Valley is the only feasible route for land access through the withdrawal from the Gulf of Alaska to the interior. In the early years of this century a railroad operated in the valley, connecting the Kennicott Copper Mines with the coast. The State Department of Highways has plans for development of a highway through the Copper River Valley with a link through the Tasnuna River Valley to the Richardson Highway. Portions of this highway have been built.

8. Between the Copper River and the western boundary of this unit is an area with an average width of 15 miles, including an estimated 18,000 to 20,000 acres of valley lowlands suitable for human occupancy. Human settlement or mineral extraction and exploration under environmental controls can thus be provided for west of the River without disturbance of the visual corridor from the River.

9. There is relatively little use, including the sport hunting, of the region at present, but highway development would probably increase entry into the area.

10. The coastal area is within a petroleum province considered to have high potential for development. Should offshore drilling occur, shorebased service facilities may be required. A small portion of the Bering River

coalfield overlaps the southern boundary of the unit. Unlike the Wrangell Mountains, the Chugach Range is not considered favorable for metallic deposits. However, one area of high potential has been noted near the southern boundary of this unit; this area is one of the most accessible portions of the unit.

Recommendations

1. Any use of the land should be conducted in a manner that does not alter its natural scenic features. Planning for this unit should be done in coordination with the Canadian government so that uses and activities here and in the adjacent Kluane National Park in Canada are compatible.

2. The Bremner River Valley and Tebay Lakes area should be maintained in their natural state (see map--Area A). Scientific research and archaeological investigation under appropriate controls should be allowed in the Bremner River Valley.

3. Outside the Bremner River Valley and Tebay Lakes area, limited recreational development should be permitted. Some trails, shelters, landing facilities for small aircraft, and similar development will be necessary to enable access and use for recreational purposes. However, the location and nature of such development should be planned in such a way as to limit alteration of the natural scenic features and to minimize manmade facilities.

4. West of the Copper River and in coastal areas near Icy Bay and Disenchantment Bay (see map--Areas D and E), settlement should be allowed under controls that protect scenic values and fish and wildlife habitat. In the remainder of this withdrawal, settlement should be prohibited.

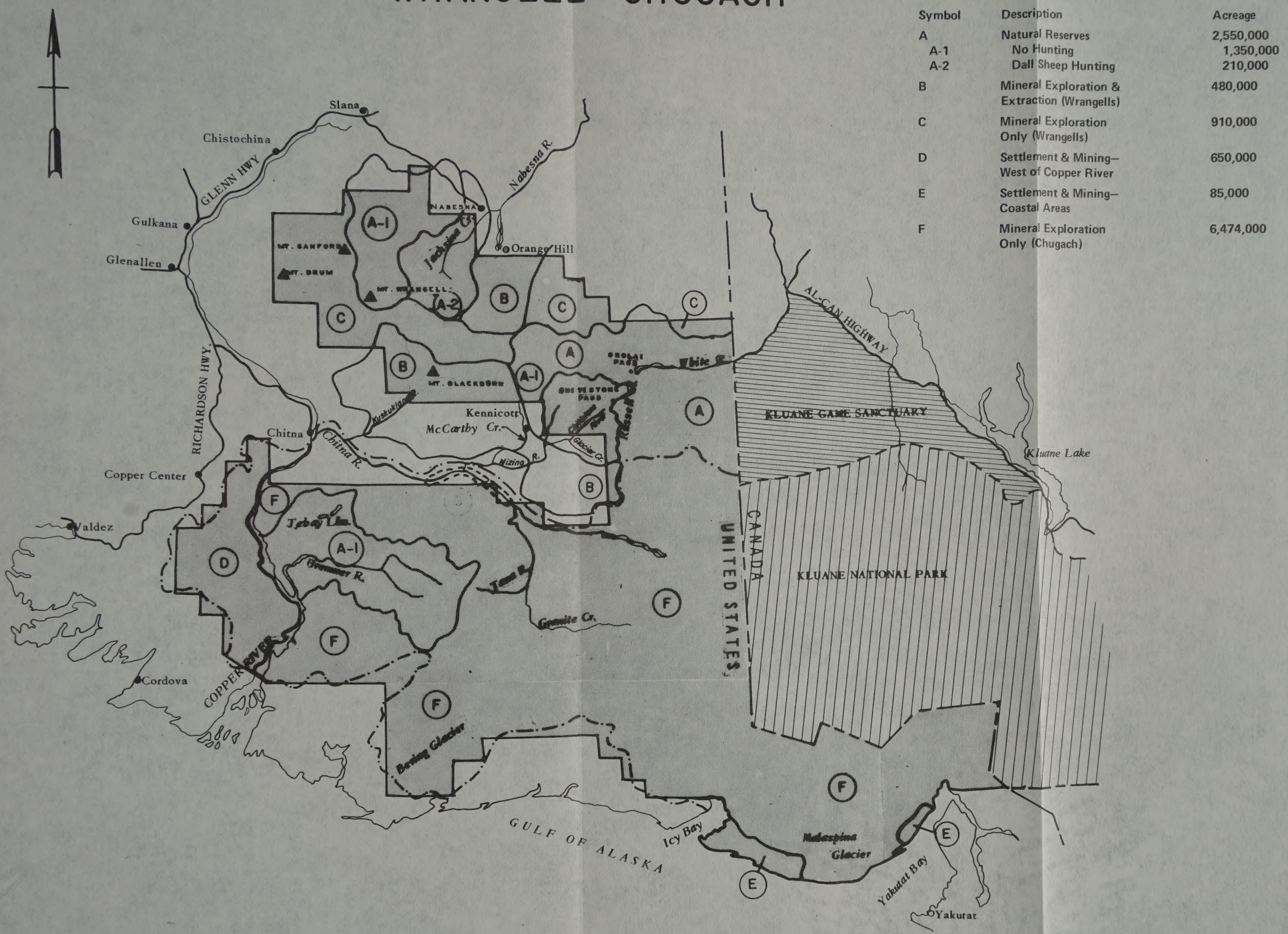
5. Hunting should be prohibited in areas which are specifically recommended for maintenance in their natural state, such as the Bremner River Valley and Tebay Lakes. Fishing should be allowed throughout the region.

6. Mineral exploration for scientific and inventory purposes should be permitted throughout the withdrawal under a permit system. West of the Copper River and in coastal areas near Icy Bay and Disenchantment Bay (see map--Areas D and E) mineral exploration and extraction should be allowed under a permit and lease system. In the remainder of the withdrawal (see map--Area F), mineral extraction should be prohibited.

7. Timber cutting for other than subsistence purposes should be prohibited.

8. Because of potential damage to the Copper River salmon fishery, Wood Canyon does not warrant further investigation as a hydroelectric site.

WRANGELL—CHUGACH



USE RECOMMENDATIONS

Symbol	Description	Acreage
A	Natural Reserves	2,550,000
A-1	No Hunting	1,350,000
A-2	Dall Sheep Hunting	210,000
B	Mineral Exploration & Extraction (Wrangells)	480,000
C	Mineral Exploration Only (Wrangells)	910,000
D	Settlement & Mining—West of Copper River	650,000
E	Settlement & Mining—Coastal Areas	85,000
F	Mineral Exploration Only (Chugach)	6,474,000

MINORITY REPORT FOR THE WRANGELL MOUNTAINS

Although we are in agreement with the majority of the recommendations of the full Commission on the Wrangell Mountains unit, we wish to comment and expand upon two points which we do not believe were given adequate attention.

First is the matter of the southern boundary of this d-2 unit. Like many other d-2 areas in Alaska, the Wrangell Mountains unit is an integral part of larger ecosystems. However, the southern boundary of this unit dissects a watershed, cutting across the south slope of the Wrangell Range at the 3,500-foot level. At the request of the State of Alaska, this boundary was originally adjusted by the Secretary of the Interior to exclude all lands with significant mineral potential. Drawn as such, it also excludes from national interest lands almost all of the forested lowlands, all of the Chitina Valley floor, all of the key scenic viewpoints of the Wrangell Crest, and the gateways to the Chitistone and Nizina canyons. We believe such a boundary threatens the integrity of the major scenic attractions in the Wrangell region by allowing mining and other noncompatible uses inside the major canyons and in the foreground of the major scenic panoramas.

Although the Wrangell unit includes approximately 4 million acres, the actual planning area, i.e. that area which can and will be used by people, is considerably smaller. The valleys and lowlands constitute the key planning area. There is little if any conflict over the icefields and mountaintops. Almost everyone--whether they are homesteaders or recreationists, roadbuilders or backpackers--will be using the lowlands, those lands below the present d-2 boundaries. Assuming that this area is eventually included in one of the four national systems, the southern boundary as presently drawn will not provide any usable sites, flat and forested, to accommodate general recreational uses, campgrounds, or family recreation activities. This could create the same kind of management problems and land use conflicts that would have occurred if the boundaries of the Yosemite Park had been drawn to include the cliffs and snowcapped peaks in the Park, and to exclude the Yosemite Valley floor from the Park.

In order to protect and enhance the primary scenic and natural values of the existing d-2 lands, we propose minor boundary adjustments which would expand the d-2 withdrawal southward to include: (1) the entrance of Chitistone Canyon, (2) the upper portions of Glacier Creek, and (3) the approach to Mt. Blackburn in the vicinity of the Kuskulana Glacier (see map). The total area involved in this recommendation amounts to less than three townships, now classified as d-1 lands. We believe this is of critical importance in maintaining the integrity of the canyons and in providing a major scenic viewpoint of Mt. Blackburn.

The second point involves hunting in the Wrangell d-2 unit. While we wholeheartedly endorse the Commission's recommendations for maintaining a balanced use of wildlife resources which will maintain the exceptional recreational and scientific values associated with the rich biota of this withdrawal unit, we do not believe that the Commission has adequately provided representative areas of habitat where hunting will be prohibited. The Commission has recommended that hunting be prohibited in the Chitistone and Nizina Canyons and on the north slope of Mt. Sanford. These areas are excellent examples of sheep and brown bear habitat, but they do not include many of the other major game species of the region. We therefore propose that the Chitistone-Nizina no-hunting zone be expanded northward and eastward to include a portion of the upper drainage of the White River Valley (see map). Eventually, we would like to see this no-hunting zone expanded to cover the entire White River Valley in order to form a link with the Kluane Game Sanctuary on the Canadian side of the border. However, at the present time the minor adjustment mentioned above will suffice to provide the desired protection. At present, hunting pressure is light in this area, and moose, caribou, and sheep can easily be viewed in their natural setting. But this will change in the future if proper protection is not provided before hunting pressures mount. In the larger and more extensively hunted regions to the north and west, hunting will still be permitted.

Submitted by: Commissioners Cooley and Hunter.

MINORITY REPORT FOR CHUGACH MOUNTAINS

The purpose of these comments is not to oppose the substance of the Commission's recommendations for the Chugach Mountains, but rather to dissent from a principal amendment to the original subcommittee report, which in our view seriously detracts from an otherwise sound set of proposals.

In the original subcommittee report to the full Commission, a uniform set of land use recommendations was proposed for the entire d-2 unit, with special additional protection for the Bremner drainage. When these recommendations were reviewed by the full Commission (at the July 16-20 meeting), it was amended to permit mineral exploration and permanent human occupancy in that portion of the d-2 unit which lies west of the Copper River (see map). We dissent from this amendment for the following reasons:

1. There is no clear demonstrated need for opening this area to occupancy. In fact, it is a very poor choice as a region for residential or private recreational development. The capacity of the terrain to accommodate human habitation is very low. No one presently lives in this portion of the unit. Although the region was open to entry for over 60 years (closed to entry in the mid-1960's by the BLM Copper River Classification), 30 years of which the railroad was operating, there are only one or two pieces of privately owned land in the region.[1]

2. Similarly, the mineral potential of the area west of the Copper River is minimal. According to recent data published by the State of Alaska, there is only one known mineral deposit in this area.[2]

3. While the residential and mineral potentials of the area west of the Copper River are minimal, the scenic, wildlife, primitive, and recreational values are exceptionally high. We believe that the character of the land in the vicinity of the Copper River drainage in the unit will best be served by keeping human disruptions to a minimum and maintaining a scenic and natural resource of the highest quality.

4. Establishing contrasting uses on opposite sides of the Copper River is not consistent with the Commission's overall objective of defining land use areas along hydrographic boundaries in order to protect the integrity of whole ecosystems. We dissent from Commissioner Brewer's view that the Copper River itself is an "adequate barrier" to prevent development-oriented uses of the west bank from disrupting natural, scenic, and wildlife values on the east bank. Wildlife and recreationists use both sides of the river

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[1] Data from the Copper River Highway Environmental Impact Statement draft prepared by the Alaska Department of Highways, p. 59.

[2] Ibid, p. 50.

valley. One side is no different from the other. On both sides, scenic values are exceptionally high and the mineral potential is low. Since both sides of the river valley within this d-2 withdrawal are equally important, the entire region should have equal protection.

5. Independent field investigations by the research group from the University of California at Santa Cruz and by the American River Touring Association concur that the Copper River, particularly that portion which flows south of Chitina through the unit, is a wild river resource of the highest quality. The spectacular scenery, abundant and often unique wildlife, the pristine forests, and the Copper River itself (which is navigable by kayakists or boatmen of moderate skill) combine to offer a unique opportunity for meeting the rapidly expanding demands by recreationists for wild river adventures. The importance of the Copper River will continue to grow as the last few wild rivers in the lower 48 states become increasingly saturated. Using the river as a boundary to define land uses presents serious problems in maintaining the quality of this important resource.

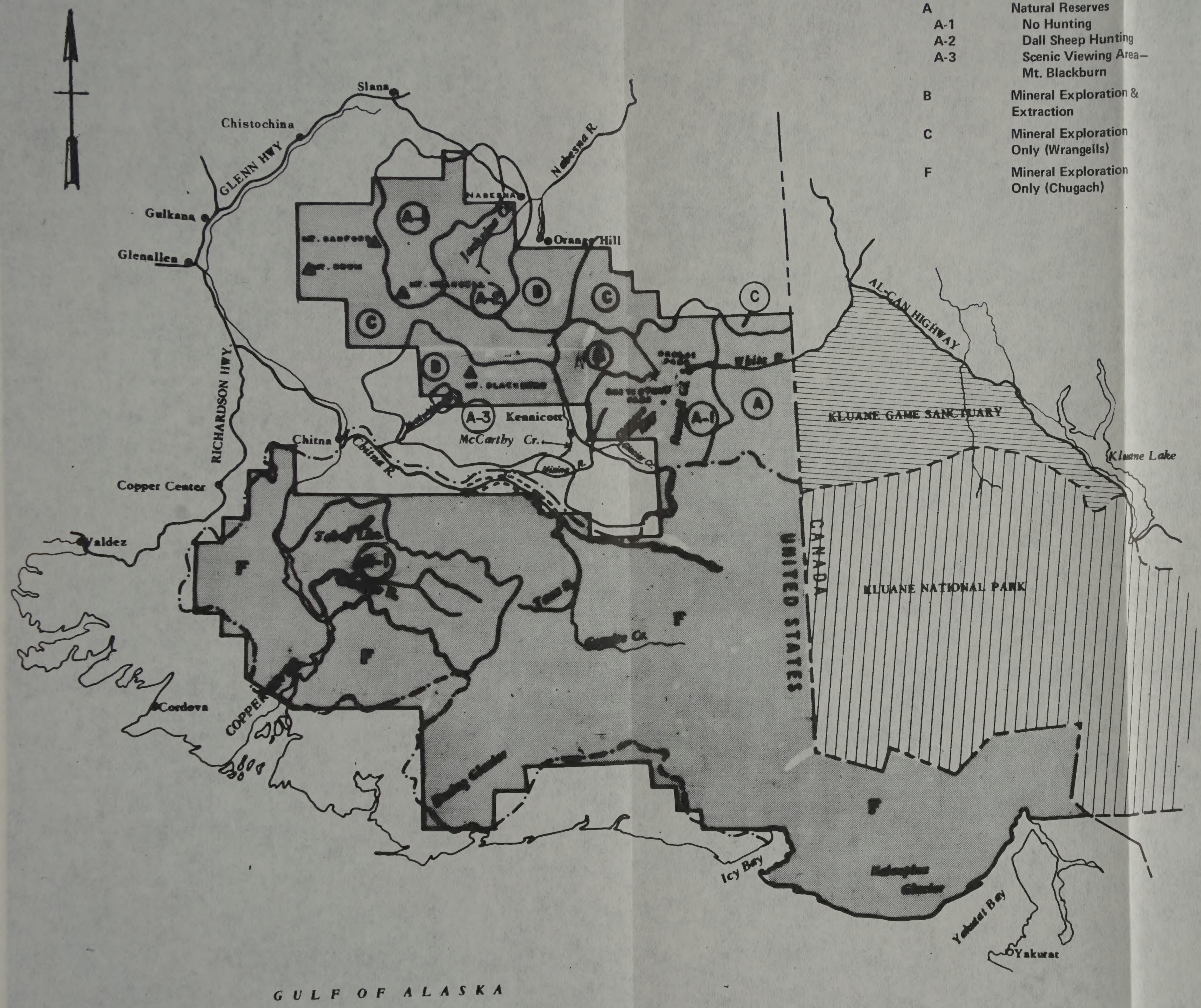
By action of the full Commission, two other much smaller coastal areas were opened to human settlement, mining exploration and development, and a variety of other land uses. These are areas of relatively flatlands along the coast on either side of the Malaspina Glacier. One lies west of Disenchantment Bay and the other is located east of Icy Bay (see map). The State of Alaska already has under its jurisdiction large land areas along this coastline of the Gulf of Alaska where these kinds of land uses can take place. We do not believe that sufficient evidence has been presented to warrant the exclusion of these two areas from the more restrictive land use provisions which have been recommended for the remainder of this unit. Indeed, we believe that since these are the only two areas along the entire coast that could provide access to the bast interior regions, any developments in these areas should be strictly controlled in order to protect and enhance the primary natural and scenic values of the Chugach region.

Submitted by: Commissioners Cooley and Hunter.

WRANGELL–CHUGACH

MINORITY RECOMMENDATIONS

Symbol	Description	Acreage
A	Natural Reserves	2,791,000
A-1	No Hunting	1,876,000
A-2	Dall Sheep Hunting	245,000
A-3	Scenic Viewing Area– Mt. Blackburn	12,000
B	Mineral Exploration & Extraction	474,000
C	Mineral Exploration Only (Wrangells)	910,000
F	Mineral Exploration Only (Chugach)	7,489,000



JUNEAU ICEFIELD

Area Description

The Juneau Icefield unit encompasses an area of heavily glaciated mountaintops to the north of Juneau. It adjoins the Canadian border and the Tongass National Forest. Much of the region is between 5,000 and 8,000 feet in elevation and is perennially covered with ice and snow.

Findings

1. The primary value of this withdrawal is the scenic beauty of its natural features. Peaks of the Juneau Icefield form much of the backdrop viewed from the Inside Passage.

2. Because it is essentially a mountaintop icefield, the area generally lacks commercially valuable resources. Nearly all of the unit is above timberline; only a few of the lower valleys are in a forest zone. There is a possibility of mineral deposits within the withdrawal; it adjoins an area where there has been mineral development.

3. Scientific inquiry into glacial phenomena has been conducted on the Juneau Icefield for many years. The Juneau Icefield has been nominated for ecological reserve status for the opportunity the unit offers to study glacial mechanics and a glacial ecosystem.

4. Surface transportation is not feasible on the rugged terrain of this unit. Aerial tramway may be the only appropriate means of access.

5. In the lower elevations on the fringes of the withdrawal there are good opportunities for hunting mountain goat, black and grizzly bears, moose, wolf, and wolverines.

6. Recreational opportunities include hiking, skiing, hunting in the lower valleys, and mountain climbing.

7. In the region of Canada adjoining the Juneau Icefield to the east, Atlin Lake Park has been created.

Recommendations

1. Any use of this unit should be conducted in a manner which protects the scenic value of the natural features.

2. Scientific research, hunting, and other recreational activities should be permitted.

3. Mineral exploration and extraction should be allowed under a permit and lease system.

4. Planning for this unit should be in cooperation with the provincial government of British Columbia to insure that uses and activities here and in the adjoining Atlin Lake Park in Canada are compatible.

Because of the physical nature of the land within this withdrawal, it is unlikely that there will be sufficient activity in the area to significantly jeopardize scenic values.

KATES NEEDLE

Area Description

This withdrawal is a long narrow strip of mountain peaks, glaciers, and alpine tundra. It is located between the Canadian border and the Tongass National Forest and approximately 25 miles northwest of Petersburg.

Findings

1. The primary value of this withdrawal is the scenic beauty of its natural features. Peaks of the Kates Needle withdrawal form part of the backdrop viewed from the Inside Passage.

2. Because it is essentially a zone of mountaintops and icefields, the area generally lacks commercially valuable resources. There is a possibility of mineral deposits within the withdrawal; it adjoins an area where there has been mineral development.

3. A potential for geothermal power has been identified in an area near the southern limits of the unit.

4. The isolated, rugged terrain makes surface transportation unfeasible.

5. Wildlife is sparse or absent.

6. Recreational opportunities are primarily mountain climbing in the upper reaches and hiking and skiing in the lower valleys.

Recommendations

1. Any use of the area within this withdrawal should be conducted in a manner which protects the scenic value of the natural features.

2. Scientific research, evaluation of geothermal potential, and recreational activities should be permitted.

3. Mineral exploration and extraction should be allowed under a permit and lease system.

4. Uses and activities in this withdrawal should be planned in such a manner as to be compatible with uses of adjoining areas in the same physiographic region.

Because of the physical nature of the land within this withdrawal, it is unlikely that there will be sufficient activity in the area to significantly jeopardize scenic values.

RIVERS UNDER STUDY OUTSIDE MAJOR D-2 UNITS

The Commission has examined most of the rivers under study in Alaska for possible inclusion in the Wild and Scenic Rivers System within the context of larger units of land and waters encompassed in the major d-2 units. All, or portions, of seven major rivers and their corresponding corridors withdrawn for study under Section 17(d)(2) of the Settlement Act lie outside block d-2 units and within lands either withdrawn for classification under Section 17(d)(1) or for Native deficiency selections under Section 11(a)(3) of the Act. These are the Unalakleet, Wind, Nowitna, Fortymile and Charley Rivers, and Birch and Beaver Creeks. Descriptions of each of these rivers, together with resources and present uses, are set out in specific findings here.

The important dimension the Commission is able to add to the decisionmaking process at this time on these rivers is the testimony it received at over 30 hearings held from late April to early June 1973 throughout Alaska and in four cities outside Alaska. The full transcript of these hearings contains many general references to potential Wild and Scenic Rivers in Alaska. There are some references to specific rivers in testimony received from witnesses appearing in Seattle, San Francisco, Denver, and Washington, D.C., and in Alaska's larger population centers. But the bulk of specific testimony on uses of the rivers and corridors under study come from the people who live in the regions where the rivers are located.

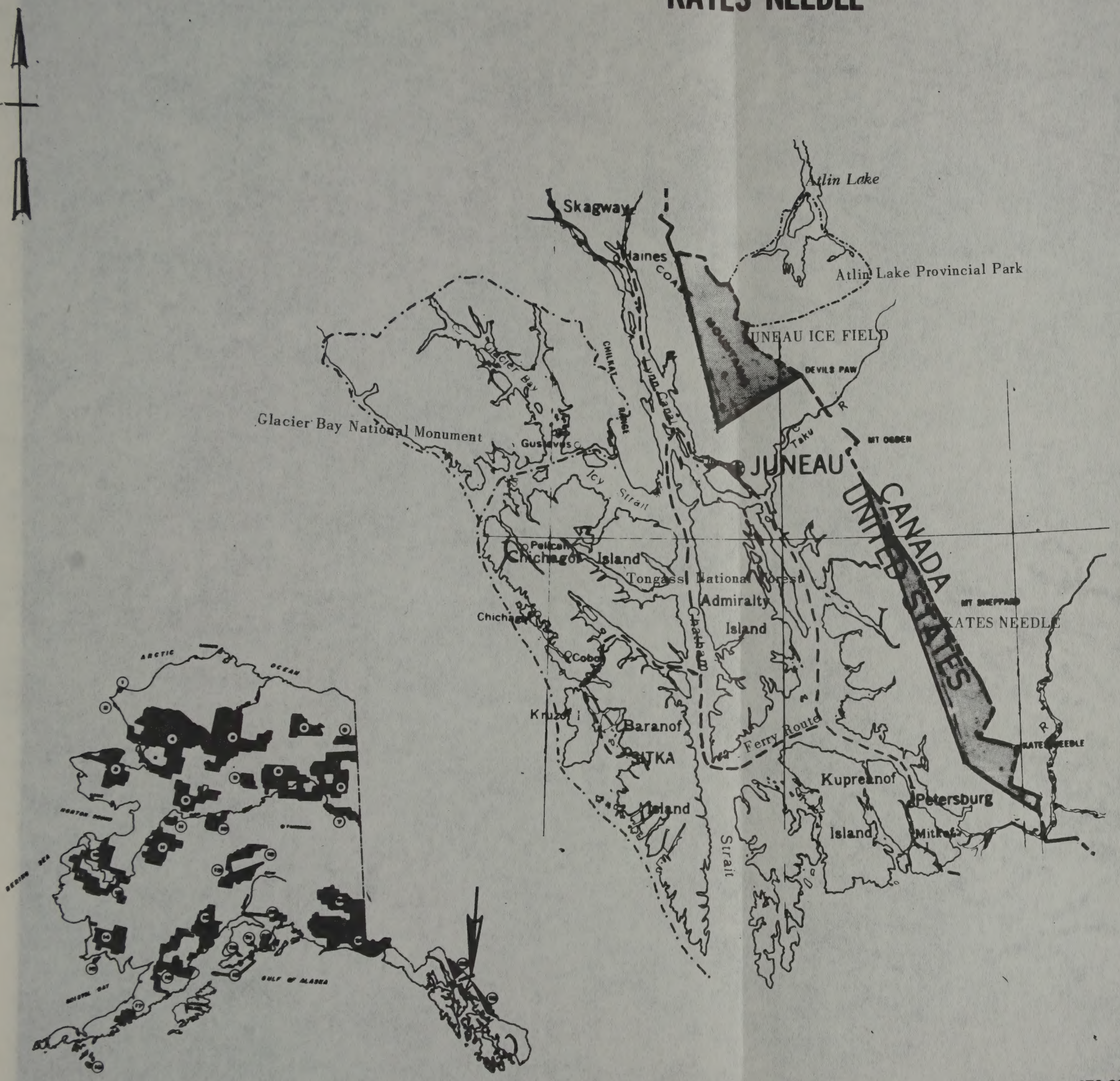
Most of the testimony on the seven rivers described here came:

> at the Nome hearing on May 7 where people came from Unalakleet to testify to their use and express their concern about withdrawal of the Unalakleet River;
>
> at the Fairbanks hearing on May 17 and 18 where specific testimony was given on the Wind, Fortymile and Charley Rivers, and Birch and Beaver Creeks;
>
> at Fort Yukon where on May 4 uses of the Wind and Charley Rivers were described; and
>
> at the Galena hearing on May 2 where people from Huslia, Nulato, Kaltag, Ruby, and Tanana came to testify on the Nowitna River.

The central theme voiced in much of this testimony was one of anxiety about any future change in the present use of the rivers and their environs. In different words illustrated by different examples, many expressed the same concerns as those of a Unalakleet resident testifying at Nome who said:

> Under the Wild and Scenic River plan we will supposedly be allowed to hunt, fish, trap, and so forth. And be allowed to do many other things in the manner of subsistence. As with this case of many regulations by government these are subject to change. We are happy for the government to have us continue using our land, but we will continue to be afraid of changes in the future. We are a people small in number and cannot have much say in what the government regulates us.

JUNEAU ICE FIELD
KATES NEEDLE



Juneau Ice Field	479,000 acres
Kates Needle	470,000 acres

SCALE: 1 IN. = 40 MI.

The Unalakleet and the Nowitna were the two, of these seven rivers, most often described as having heavy subsistence use. In emphasis of the many subsistence-related activities cited by residents of regions surrounding these rivers, witnesses from Unalakleet appearing at Nome testified that 90 percent of the fish and game--a major part of their food supply--comes from the Unalakleet River and the lands along its banks. Similarly, witnesses at Galena spoke of these same uses and heavy trapping as sources of local income along the Nowitna River. The fuel needed by people living near the Wind River, the Commission learned, was supplied by timber along its banks. The timber along the Nowitna also supplied logs for cabins, local home construction, fish wheels, snowshoes, and other necessities; and the timber along the Unalakleet was used to meet some of these same needs for people as far away as the treeless Kuskokwim.

Frequently, people identified the location of cabins they owned or used along the Unalakleet and Nowitna Rivers or described the allotments they hoped to receive for their fishing and hunting camps or berrypicking sites along these rivers and along the banks of the Charley and Fortymile Rivers, and Birch and Beaver Creeks.

Activities for subsistence purposes were not the only uses identified. The use of the rivers as transportation arteries was also a major theme. The people testified to the need to keep the rivers open for motorboats and snow machines. Specially equipped airplanes, the Commission learned, were also used on some of these rivers. They described freight hauling of minerals and supplies on the Nowitna. They described the deposits of flour gold in the Birch Creek. At Fairbanks a witness spoke of sports hunting and fishing on the Wind River and another of canoeing and kayaking for recreation on the Charley and Fortymile Rivers and Birch Creek. Concern was also often expressed that the rivers be kept free flowing.

While much of the testimony described past and present uses of these rivers and most witnesses were anxious that the rivers' classification would not restrict these uses, the effect on potential future uses of the rivers, their corridors, and the lands beyond them was even more uncertain in the people's minds. They asked questions like these. "Can we continue to use our boats and snow machines on the river?" "Will I be able to build a fishing lodge on my allotment?" "Can I cut a path through the brush to carry out the moose I shoot?" And from a spokesman for Doyon, Ltd., a Native Regional Corporation, "Suppose we select some of our lands next to the corridor, will we be able to develop the mineral resources on our lands, if we can't barge out the ore?"

As often as the witnesses looked to the future, they also looked to the past and described the graves, the landmarks, ancient villages, and campsites of value as antiquities.

All but a very few of the over 200 villages in rural Alaska are located on either the coast or on waterways. Villagers of rural Alaska have looked and continue to look, to the seas, lakes, and rivers as their major transportation arteries and sources of livelihood.

WIND RIVER

Setting and River Characteristics

The Wind River originates in the Philip Smith Mountains of the eastern Brooks Range in northeast Alaska, approximately 120 miles north of the Arctic Circle. It flows southeasterly for 85 miles to its junction with the East Fork of the Chandalar.

The river flows through a deep U-shaped glaciated valley 3 to 4 miles wide with the surrounding mountains often rising over 3,000 feet above the river. Sidestreams tend to be small but are often draining broad valleys. In the middle and lower reaches of the Wind River Valley, several small lakes lie on each side of the river.

Gradient varies over the length of the river with the steeper sections being the upper 30 and lower 40 miles with a flatter section in the middle.

It is a nonglacial stream with clear water. Because it flows over old glacial till and because of erosion in the adjacent mountains it becomes silty during periods of high runoff.

The bottom is generally stony in the steeper sections and gravelly to sandy in the flatter areas. No falls exist in the river, but major sections of rapids occur from approximately 40 miles above its confluence with the East Fork downstream for 5 to 6 miles and in the 10 miles above the confluence.

Near the headwaters the stream averages to to 45 feet wide and 1 to 2 feet deep, enlarging to 150 to 180 feet wide and 4 to 10 feet deep near the confluence. It is braided in the upper sections, meandering in the middle, and is confined largely in a single channel in its lower sections. Water temperatures range from near 32°F during winter to around 55°F in July. Ice, which may reach 4 feet in thickness, begins forming in October.

Land Status

The upper 25 miles of the river flows through lands withdrawn under Section 17(d)(2). Downstream, a 2-mile-wide corridor for withdrawal along approximately 40 miles of the river. The land adjacent to this corridor is classified under Section 17(d)(1). The lower 15 miles of river flows through lands withdrawn as Native regional deficiency areas.

Resources

No minerals in commercial quantities have been located and no mining claims exist in the river area. Because the river valley was scoured by glaciers, the potential for placer deposits of precious metals is considered low even if a source is present. The absence of placer deposits and the remoteness of the river have undoubtedly discouraged prospecting in the area.

Five to 10 miles west of the river, easterly trending belts of metamorphic rocks and intrusive rocks come into near north-south contact with the sedimentary rocks of the Wind River area. This complex of rocks lying between the Middle Fork of the Chandalar and the Wind River is mineralized. Untested lode occurrences of copper, silver, lead, and gold have been reported. It is in this area that 40 lode claims for copper have been filed. Thirty of these claims lie approximately 6 to 8 miles west of the Wind River along one of its tributaries.

Some of the white spruce, paper birch, and balsam poplar along the lower river may be considered to be of commercial value. However, the extremely small stands of such trees and the remoteness of the area preclude marketing.

Wildlife is abundant and varied in the area. Grizzly bear, moose, Dall sheep, caribou, wolf, wolverine, small fur bearers, and a variety of birds are present.

Grayling, northern pike, whitefish, and burbot are common in the region and believed to inhabit the river and adjacent lakes.

Pristine environment, remoteness, magnificent alpine scenery, abundant wildlife, geological features, and the free-flowing river are among the recreation resources. Opportunities for recreation include sightseeing and nature study, boating, hiking, camping, fishing, and hunting.

Present Uses

A small amount of sport fishing and hunting occurs, mostly by "fly-in" hunters after grizzly bear and Dall sheep.

Some hunting and trapping for subsistence purposes takes place along the lower river by Natives from the Venetie Indian Reservation.

At least one, and possibly several, registered guides operate in the area. One camp consisting of several cabins near Keche Mountain on the lower river is used by guides.

UNALAKLEET RIVER

Setting and River Characteristics

The Unalakleet River is a clear-water, free-flowing intermediate-sized river flowing southwesterly to the eastern shore of Norton Sound. Rising in the Kaltag Mountains, the river flows about 90 miles between northeast-trending ridges of rounded summits and gentle slopes. The highest peaks have a maximum elevation of 2,800 feet.

In its upper reaches, the river is small; flowing through a narrow valley of 1 to 2 miles in width. Valley walls support white spruce and paper birch with moist tundra crowning the ridges; the valley floor is muskeg and supports black spruce. Farther west the valley broadens to widths between 5 and 8 miles. Small lakes up to 1/2 mile in length dot the valley floor in the lower reaches. Black spruce and willow appear along the riverbanks. Bluffs rising 200 feet in height on the northern side characterize the last 20 miles of the Unalakleet. Near its mouth, the river divides into several channels before entering Norton Sound.

Maximum stream flow from spring breakup occurs in late May and early June. Although the river is narrow in its upper reaches, it widens to approximately 200 feet along its middle section and up to 500 feet in its lower reaches.

Water quality data is lacking. However, overall water quality based upon appearance and sampling done in other areas of the region seems good.

Land Status

Except for the lower river which passes through the Unalakleet village withdrawal lands, most of the lands 1 mile on each side of the river totaling 51,000 acres were withdrawn under Section 17(d)(2) as national interest lands. Twenty-five Native allotment applications have been made on lands within the d-2 corridor.

It appears that the Unalakleet River could be considered navigable for much of its length, in which case the State of Alaska may own the streambed.

Water Resource Developments

A Corp of Engineers study report (Nov. 1, 1972) found a serious erosion problem at the river's mouth and a flood problem at the village of Unalakleet. The report also stated that navigational improvement would be helpful at the river's mouth, but that these improvements were not found to be economically justified at that time.

Resources

The mixed evergreen-deciduous forest that occurs in part of the area has little commercial value. Timber could be used locally for house logs, firewood, fenceposts, etc.

Generally, the corridor and surrounding area is suitable for reindeer grazing. There are no arable lands.

Wildlife of the unit includes moose, caribou, grizzly and black bear, wolf, and wolverine, as well as smaller fur bearers and birds. Waterfowl, primarily ducks (mallards and mergansers) and some geese, use the river.

All species of salmon spawn in the river. The river also contains populations of Arctic char, grayling, and humpback whitefish.

Recreation resources include the river, scenery, wildlife, fisheries, history, and an environment largely remaining in its natural state. Recreation opportunities include fishing and hunting, boating, sightseeing, nature study, and camping. The river has an excellent sport fishery. The Kaltag Trail parallels the river on the southern side. This is a dogsled trail to the Interior and is a part of the historic Iditarod Trail.

The hills through which the river flows are composed mostly of tightly folded sandstone, conglomerate, and shale of Cretaceous age. There is low potential for oil and gas.

Present Uses

Existing uses within the 2-mile corridor along the river include hunting, fishing, and trapping for subsistence purposes. Commercial salmon fishing is important and concentrated along the lower river at its mouth. Sport fishing and hunting occur. There are four cabins located along the river in its lower 10 miles. Another cabin is located upstream at Old Woman River. The Kaltag Trail is used locally for travel by dogsled and snowmobile. In March 1973, the trail, as a segment of the Iditarod Trail, was part of the route for a sled dog race from Anchorage to Nome. Reindeer are herded in the lower river area, northward along the coast, and inland a few miles.

NOWITNA RIVER

Setting and River Characteristics

The Nowitna River meanders for 250 miles in a northerly direction through interior Alaska from the Kuskokwim Mountains to the Yukon River. The river has a threefold setting of upper, middle, and lower sections.

In the upper section, the river meanders amid hills between its source near the Sunshine Mountains, and its confluence with Mastodon Creek. The middle section flows over riffles and small rapids through a canyon between Mastodon Creek and Big Mud River. Finally, the lower part meanders across a low plain with potholes and oxbow lakes to its mouth at the Yukon River.

River width varies from 30 feet near its source to 1/4 mile near its mouth with an average width of 200 feet. It drops about 900 feet in the 250 miles of its length. The river is a free-flowing nonglacial stream which flows through country little affected by man.

Maximum stream volumes are associated with spring breakup or rainstorms. There are no known sources of sewage or chemical pollution.

Land Status

D-2 lands contain the lower 155 miles of river. There are no mining claims in the river corridor and no patented lands. Six Native allotment applications for eight parcels have been made.

Though streambed ownership has not been determined, the character of the river is navigable and, as such, the State of Alaska may have ownership.

No adjudicated water rights exist along the river.

Water Resource Developments

The Alaska Power Administration has identified a flood-control-power generation damsite in the Ruby area. This impoundment would inundate the lower Nowitna River plain as well as much of the Yukon. The Power Administration found this site necessary if it were to control the flow of the middle Yukon River.

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Access

The Nowitna River is not accessible by road anywhere along its course. Aircraft, boat, dogsled, or snowmobile must be used.

Resources

There are a few gold placers near Sunshine Mountain and the drainage basin has potential for antimony, gold, copper, mercury, lead, silver, tin, tungsten, and zinc.

Wildlife in this area include black and brown bear, wolverine, wolf, moose, caribou, and northern riverine fish. Smaller species of fur-bearing mammals are also present. Waterfowl including a variety of ducks and some cranes, loons, and geese are plentiful in the pothole country adjacent to the river.

Mixed evergreen-hardwood forests border the river along some of its length. Some of this timber is classed as commercial; but the remoteness of the area and the relatively small size of the trees limit marketability.

Recreation resources include the wide and deep river which is suitable for both canoe and powerboat. Wildlife and an environment largely in its natural state are some of the other attractions. Garnet, petrified wood, chalcedony, and agate are present in great numbers. Bones of prehistoric animals are occasionally found in the riverbanks. Recreation opportunities include boating, hiking, remote area camping, fishing, hunting, sightseeing, nature study, and rock collecting.

Present Use

The Nowitna River is currently used for trapping, tree cutting, hunting, fishing, and access to mining sites and other hunting areas.

Access to this part of the Kuskokwim Mountains area is currently by snow machine or by boat when the river is open. People commonly start from Ruby and other points as far away as Fairbanks, travel the Yukon River to the Nowitna River, and then follow the Nowitna and its appropriate tributary to their destination. Most of the Nowitna drainage is used by sport and subsistence hunters and trappers. Also, the river provides a transportation route for villagers. Some trees along the streambanks are cut for house logs by local residents. Miners boat or barge materials and equipment on the river to upstream locales.

FORTYMILE RIVER

Setting and River Characteristics

The Fortymile River originates in the gently sloping mountains of the Yukon-Tanana Uplands and flows northeasterly to its confluence with the Yukon River in Canada. There are over 400 miles of major streams within the Fortymile River system. Approximately 95 percent of the 6,500-square-mile drainage system is within Alaska.

Major stream valleys range in elevation from 2,200 feet at Joseph on the Middle Fork to just over 1,000 feet at the U.S.-Canada border.

All streams are clear during the summer months; however, the Mosquito Fork has a brownish cast which appears to be related to the high quantity of organic matter in the water.

The highest stream flows occur in May when the snow melts and ice leaves the channels. The streams begin to freeze in October and by December have completely frozen.

Water quality data is lacking; however, it appears that the overall quality is good. Water temperatures are cool, but not nearly as cold as glacial streams.

Land Status

Nearly the entire shoreline is in Federal ownership and a corridor 1 mile in width on each side of the stream is withdrawn under Section 17(d)(2). Adjacent to this corridor, there are Native regional deficiency withdrawals and Section 17(d)(1) "public interest" withdrawals. Many unpatented mining claims have been filed on the lands along the river and major tributaries.

It appears that much of the mainstream and major tributaries could be considered navigable, in which case the State of Alaska may own the streambed.

Resources

This is a highly mineralized region with great promise of important future base metal and asbestos discoveries. It was one of the earliest active placer mining districts. Placer miners found gold in the Fortymile prior to the discovery of the Fairbanks district.

Possibilities of base metal ore bodies being found in placer districts are always good. Recent exploration in the Fortymile has revealed the presence of porphyry-type copper deposits.

Numerous mining claims and metal deposits exist throughout most of the drainage. Except for a relatively small southwestern portion, the drainage lies within a metal province favorable for tin, tungsten, gold, lead, and zinc. High potential areas for gold and asbestos exist in an approximately 40-mile-square area bounded on the south by 64° N latitude and on the east by the Canadian border, and in a smaller area at the headwaters of the North Fork of the Fortymile River. Oil and gas potential is presently considered low.

The timber in the area is considered to be noncommercial. Stands present are composed of white spruce, black spruce, balsam poplar, cottonwood, birch, and aspen. Both blueberries and cranberries are abundant locally.

The area contains interesting geological features and is rich in both historic and archaeological values.

Fish species found in the area include salmon, pike, and whitefish in the lower stream reaches, and grayling in the upper parts. Sheep, moose, caribou, bear, wolf, and beaver are present. Birdlife found along the river include such raptors as bald eagle, peregrine falcon, and sever species of ducks.

Present Uses

Present uses of the area consist primarily of mining, recreational boating, sightseeing, hunting, and fishing.

Most of the river is in a primitive state while some parts are accessible from the Taylor Highway. Access to the upper reaches is by aircraft.

The opportunities for recreation include canoeing, limited white-water boating, hiking, nature study, fishing, hunting, gold panning, sightseeing, and visiting areas of geological and historic interest. Winter opportunities include cross-country skiing, snowshoeing, dogsledding, and snowmobiling.

CHARLEY RIVER

Setting and River Characteristics

The Charley River is located just east of the Fortymile River about 200 air miles east of Fairbanks. It rises in the Tanana-Yukon Uplands and flows northerly to join the Yukon River midway between Eagle and Circle. The mainstream and its major tributaries are about 160 miles in length. The width varies from 10 feet to 100 feet and depths from 1 to 15 feet. The average gradient of the river is about 31 feet per mile, although some sections are meandered and braided. The waters are clear and of good quality.

Land Status

A 2-mile wide corridor in d-2 withdrawal includes lands within 1 mile of each bank of the river. Lands adjacent to the corridor include Native regional deficiency and d-1 lands. Mineral claims have been made on sites in the Godge Creek drainage.

Resources

The timber of the area--composed of mixed stands of white spruce, birch, poplar, black spruce, cottonwood, aspen, and tamarack--is considered to be noncommercial. The entire region surrounding the Charley River drainage is highly mineralized. The drainage lies within a metal province favorable for gold, tin, lead, silver, tungsten, zinc, copper, and molybdenum.

The wildlife resources of the Charley River basin are substantial and include moose, sheep, bear, and wolf. Fishieries include sheefish, salmon, grayling, and whitefish. A pristine environment, scenery, and a variety of other natural values are the primary recreational and scientific resources. Recreation opportunities include canoeing, kayaking, sightseeing and nature study, hiking, camping, fishing, and hunting.

Present Uses

Present uses include hunting, fishing, prospecting, river boating, and subsistence uses in the lower reaches of the river. The main access to the river is by boat from the Yukon River and by aircraft to the upper portions of the river basin.

BIRCH CREEK

Setting and River Characteristics

Birch Creek is formed by the confluence of small mountain streams at a point about 65 miles northeast of Fairbanks. Rising in the uplands between the Yukon and Tanana Rivers, the upper reaches of the stream flow through broad valleys surrounded by rolling hills with elevations as high as 4,000 feet. The stream course is bounded generally by mixed birch-spruce forest, and in certain areas white spruce and aspen grow. The lower reaches of the creek flow across the Yukon Flats and traverse muskeg and black spruce areas where permafrost exists. Across these areas good views of the mountains are obtained.

Near the headwaters, but downstream from the confluence of the smaller streams, the creek averages 30 feet in width and from several inches to 4 feet in depth. In the upper half of its reach the stream has a relatively steep gradient of approximately 10 feet per mile; the lower one-half of the stream flows largely across the Yukon Flats and has a gradient of 1 to 2 feet per mile. In the lower reaches of the stream it widens to 20 to 150 feet and has a depth of from 4 to 8 feet with deeper pools common. The flow of the stream is generally northward. The length of the stream is 314 miles.

Stream flows have not yet been determined, but maximum flows usually occur in May. Ice cover forms on the stream in October and may reach a depth of more than 4 feet during the winter. Sediment content of the stream is low and temperature of the water is about 32°F in winter with highs of near 60°F in summer.

Land Status

The entire length of the study area flows through lands classified under Section 17(d)(1) of the Alaska Native Claims Settlement Act. A 2-mile-wide d-2 corridor is withdrawn along the river. Three land use applications and one patent have been recorded on the lands along the creek. These are a Native allotment (40 acres), a homesite patent (5 acres), an active mining claim on McLean Creek, and an oil and gas lease filed in 1970.

Access

Access to the stream is available by road at mile 94 and again at mile 139 on the Steese Highway.

Water Resource Development

The reservoir of the proposed Rampart Dam on the Yukon River would inundate the lower reaches of the river.

Resources

Recreation resources include the river accessible by road, changing and dramatic scenery, and wildlife. Recreation opportunities are canoeing, kayaking and rafting, sightseeing and nature study, fishing, hunting, hiking, remote area camping, gold panning, and some winter activities.

Several historic and archaeological sites have been identified in the lower Birch Creek area--mostly north of the mountains.

Birch Creek lies within a mineral belt that has potential for tin, tungsten, gold, lead, and zinc. An oil and gas province with moderate potential has been identified in the Yukon Flats and underlies the lower portion of the river.

Fish include grayling in the upper reaches, and northern pike, sheefish, and whitefish in the lower reaches.

Big game species common along the river include moose, black bear, and wolf. Caribou are present at certain times of the year. Many fur bearers are common. Game birds include ptarmigan, grouse, ducks, and geese. Several species of raptors are also present.

Potential agricultural lands are generally limited to those adjoining the lower reaches of the river in the Yukon Flats.

Present Uses

Hunting, fishing, boating, and sightseeing are the chief recreation activities along the river. Several old log cabins along the banks are used for hunting and one for trapping purposes. There is no permanent habitation. No farming, timber harvesting, grazing, or mining activities are taking place in the 2-mile-wide corridor. There has been and presently is some placer mining in one or more tributary streams.

BEAVER CREEK

Setting and River Characteristics

Beaver Creek is formed by the confluence of Bear and Champion Creeks at a point about 50 miles northeast of Fairbanks. The upper reaches of the stream flow through the scenic White Mountains with peaks of 3,000 to 4,000 feet. The stream course is bordered by a mixed birch-spruce forest and in certain areas by stands of white spruce and balsam poplar. Portions of the stream flow over tundra assumed to be underlain by permafrost. The lower reaches of the stream, the last 15 miles, are largely on the lowlands of the Yukon Flats with low stream gradients and many backwaters and meanders.

In the upper reaches, Beaver Creek is about 60 to 75 feet wide and has an average depth of between 2 and 4 feet. The creek drops in elevation at an average rate of 8 feet per mile. Its confluence with the Yukon River is about 100 miles north of Fairbanks and approximately 300 miles downstream from its point of formation. In the lower reaches of the creek, the stream widens to between 90 and 150 feet, and the stream depth ranges on the average from 6 to 10 feet, with deeper pools being common.

Stream flows have not been determined, but the stream lies in an area where maximum discharge occurs in the spring from snow melt and spring rains. The water in the stream flows throughout the year. An ice cover which may exceed 4 feet forms in October and lasts through the winter.

Sediment load is low. Water temperatures range from lows of near 32°F in the winter to highs of nearly 60°F during summer.

Land Status

That portion of the creek under study flows through lands classified under Section 17(d)(1) of the Settlement Act. A 2-mile-wide d-2 corridor is withdrawn along the river. Five acres along the creek has gone to patent, and some 240 acres have been filed on under various provisions of the land laws.

Access

Access to the stream is limited to trails; no roads exist in the area. However, the distance from the Elliott Highway to Wickersham Creek is only a few miles and from the Steese Highway through Nome Creek slightly farther.

Resources

Two mineral belts converge and overlap in the Beaver Creek area. One has potential for antimony, gold, and silver. The other has potential for tin, tungsten, gold, lead, and zinc. Placer mining has occurred in the general area, and there are mining claims in the upper tributaries. Some quantities of salable minerals--building stone and limestone--are found in the area.

Upland spruce-hardwood forest along the river corridor is generally noncommercial, though some local use could be made of some of the timber. Remoteness limits marketability.

Wildlife in the area of the river corridor includes moose, Dall sheep, occasional caribou, grizzly and black bear, wolf, wolverine, lynx, and small fur-bearing mammals. Fish include grayling and northern pike. A variety of birdlife is also present, including ducks, geese, eagle, hawk, and owl.

Recreation resources include the limestone cliffs and high craggy hills of the White Mountains, a swift clear stream with no rapids or other obstacles, an abundance of big game animals, the complex geology, and prevailing natural qualities. Chief recreation opportunities are canoeing, hiking, sightseeing and nature study, hunting, fishing, and remote area camping.

Some lands with agricultural potential are found near the Creek in the Yukon Flats.

Present Uses

Present uses in the stream area are restricted to recreational activities, although some mining activities may again develop in the headwaters area. No year-round habitation exists. A few cabins exist from which hunting for moose and Dall sheep is done. Some limited trapping may also occur in the area. In the lower reaches of the stream, grayling and northern pike are fished.

IV. APPENDICES

ISSUES, CONCEPTS, AND POLICY PARAMETERS IN THE COMMISSION'S PLANNING TASKS

The creation of the Joint Federal-State Land Use Planning Commission for Alaska as an instrument for the implementation of the Alaska Native Claims Settlement Act is a significant step in creating a viable and meaningful pattern of land use and ownership in Alaska. The establishment of the Commission also marks a continuing interest on the part of both Federal and State governments in shaping the orderly development of Alaska's potential economic strength. The legislation charges that the Commission engage in a variety of planning activities. These undertakings range from rather specific tasks to broad scale economic planning endeavors. Section 17(a)(7)(I) of the Act instructs the Commission to:

> make recommendations to insure that economic growth and development is orderly, planned and compatible with State and national environmental objectives, the public interest in the public lands, parks, forests, and wildlife refuges in Alaska, and the economic and social well-being of the Native people and other residents of Alaska.*

The importance of the Commission's task is immense. The ultimate patterns of land ownership, control, and use that emerge from the implementation of the Act will determine in large part the very quality of future life in Alaska.

Implementation of the Act involves both a concert and conflict of interests among the three major parties involved. At the Federal level several issues of national concern are involved.

The energy crises is shaping national thinking in matters of national security, foreign policy, inflation, and the balance of payments; and is making Alaska's energy resources ever more attractive. The availability of various nonenergy mineral and timber resources assumes increasing importance as domestic supplies diminish and U.S. dependence on foreign sources threatens to increase.

There is a growing understanding among people that the environmental issues are not a passing fad, but rather are a matter of fundamental importance in the improvement of the quality of life in America. There is recognition nationally that Alaska is a land where environmental quality can perhaps be preserved (avoiding the need for future restoration), at the same time that the State engages in the necessary process of economic expansion.

Alaska shares the national concerns over energy and resources; but its focus is necessarily different. Alaska is a land of extremes--geographic, social, and economic in character. It ranks third in the nation in terms of per capita income; yet it contains some of the poorest communities. It is an economically prosperous state; yet its unemployment rate persists at twice the national figure. Seasonality of employment is high, with some industries experiencing variation in employment in excess of 100 percent.

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*Similar language is contained in the Alaska Statute 41.40 et seq.

In a land richly endowed with natural resources, the major economic force in the State is Federal government spending. Although the economic system of urban areas is highly similar to that of the rest of the United States, the rural area has basically a subsistence economy supplemented by governmentally supported services and transfers.

Clearly, Alaska has special needs with respect to future land use patterns. It is essential that the fiscal base of State government be greatly increased in terms of both the magnitude and breadth of revenue resources. Parallel to growth of the fiscal base must be the diversification of economic activity in the State and a corresponding decline in dependence on the Federal government. It must also be recognized that economic growth in the past has completely failed to dent Alaska's unemployment rate, and that economic change of a different character must result if progress is to be seen in the future. The rural underdeveloped areas must also have the opportunity to engage in the process of economic progress that the rest of the State is potentially able to enjoy.

Alaska's primary concern with land use is the manner in which land can be used to promote economic progress and well-being for the people of Alaska. At the same time, the State is vitally concerned with the problem of environmental control and recognizes that economic progress and environmental balance are inextricably entwined.

A third set of interests, those of the Alaska Natives, are of paramount importance. Their social structure--their entire culture--is intimately linked to land use patterns. Major changes in land and resource use policy or regulation could spell the end to the very basis of the Native way of life, either forcing the Natives from the rural to the urban world or dangerously increasing their dependency status on paternal government.

At the same time that Natives are deeply concerned with maintaining the basic elements necessary to preserve a way of life, their interests dictate that another choice should exist. It will become increasingly important to preserve their ability to choose to move towards economic integration with the rest of the Alaskan economy and to share in the prosperity that characterizes most of the rest of the State.

The importance of this choice must not be underestimated, but neither does it represent a presently viable alternative for rural Alaska. If it occurs at all, the process of economic transition is an extremely slow and difficult one, a process to be thought of in terms of decades, not years.

The Native interests, and those of Federal and State government, have been discussed extensively. It is essential that another interest group does not become submerged under these broadly delineated groups. Specifically, a vast range of "people" interests must be incorporated into the land use planning decision. Three general categories include many of the expressed desires of individuals. The first of these falls under the heading of "personal livelihood," and encompasses the desires of the small miner, the guide, the farmer, and others whose occupations are tied directly to the land.

A second group is intensely concerned with recreational uses. It wants to be able to hunt and fish, to ski, or simply to "get away from it all" by mechanized or non-mechanized means of its choice.

The third group is also interested in "getting away," but is deeply concerned with the quality of the wilderness experience. Its interest is a part of the broader environmental concerns, which in this context are more narrowly focused.

The Commission's planning tasks involve not only the questions surrounding d-2 lands, but also encompass land management systems and policies, transportation planning, and review of existing land use. Thus, in the process of developing d-2 use recommendations, several significant issues were raised; and a variety of concepts and policies were discussed. Some were related directly to the d-2 uses, while others were of general concern to the overall Commission undertakings. In either case, they are important in understanding the general framework in which the recommendations are made and are discussed below.

Environmental Quality and Land Use Management

The determination of a land use for an area is a complex decision. It is not one that can be made simply by reviewing a checklist of resource assets. Rather, the decisionmakers have in mind an image of the land and an idea of the character of the land that is to be preserved or fostered. They arrive at such an image from studying materials dealing with the land, from contact with those knowledgeable about the land, and from personal experience.

Land use patterns must then contribute towards achieving the desired image. Is the character of the land best expressed by preserving it as true "wilderness" free of man's impact, or does the character of the land support its use in meeting the economic needs of a growing Alaska? Is the continual use of the land in its historical patterns in keeping with the desired character of the land? To what extent are simultaneous uses possible?

The real question then is not "which land uses," but "what character of the land" shall be encouraged. This is a difficult question, one which was continually encountered in the process of making land use recommendations. It was readily apparent that it is almost impossible to control the character of the land by designating a specific use or set of uses. The land's character depends not only on what uses are made of the land, but also on how it is used. Thus, use and management are inseparable.

The vital links between land use and management and the particular forms of management systems are central issues in the total scope of Commission activities. If the desired land use patterns are to become a reality, then, the management of the lands must be in harmony with those desires. As these desires are intimately connected with the sought after "character of the land," any management system must have some form of guidelines suggesting what that character is.

One possible frame of reference is found in the concept of environmental management. In a very real sense this is a theme that has been recurrent in Commission discussions and is reflected in both the form and substance of most of the recommendations.

Essentially, the Commission recognizes that a variety of uses may be compatible, subject to the constraint that any use should be consistent with maintenance of environmental quality. It is this concern for environmental quality that is central to environmental management.

Environmental management, both in scope and concept, evokes a great diversity of views. Several dimensions are clear in the present situation, however. Almost all of the d-2 areas are integral parts of broader ecosystems. Hence, managing the d-2 areas without regard for surrounding areas, or managing adjacent areas with disregard for what goes on in a d-2 area, may well portend disaster. The need for cooperative or joint owner management should be clear. In some cases several d-2 areas are intimately tied, and the management of one should not be separated from that of another. This is perhaps particularly true for the Brooks Range, where the whole question of man and his impact on the Arctic has only been superficially explored.

Another dimension relates to the need for land use patterns to respond to the changing needs of society over time. The "appropriate" land use of today may not be that of 20 or 100 years from now. The management system must have the capacity to meet these changing needs without jeopardizing present "highest and best" uses.

In a more general vein several attempts have been made to define environmental management. One of the more comprehensive coverages is contained in a report from the Senate Committee on Interior and Insular Affairs.* Five broad classes of activities are included: renewable and nonrenewable resources, environmental health and well-being, promotion of amenities, and ecological research. Within these categories are included such particular areas of concern as air and water quality and conservation, transportation planning, mineral resource conservation, physiological and psychological well-being, and outdoor recreation.

These areas are neither exclusive nor exhaustive, but they do indicate the range of concerns that are encompassed in managing the quality of the environment. The crucial point is that land use management must be vitally concerned with the control of the entire environmental milieu, not on one or another of its pieces.

Land Status

Just as it has been necessary for the Commission to consider and recommend some management and regulatory matters to assure the compatibility of uses recommended in the d-2 areas under consideration, it has also been necessary for the Commission to recognize some contraints on land uses resulting from different land ownership. At the conclusion of the withdrawal and selection process set out in the Alaska Native Claims Settlement Act and after the exercise of selection rights provided in the Alaska Statehood Act, there will be three major landowners in Alaska--the Federal government, the State government and its municipalities, and various village and regional Alaska Native corporations. Private landowners will derive their titles from these major landowners (see Figure I).

To a large degree the Federal-State Land Use Planning Commission is concerned with recommendations which affect the land ownership pattern in Alaska. But until final implementation of the Settlement Act and final State selections, land

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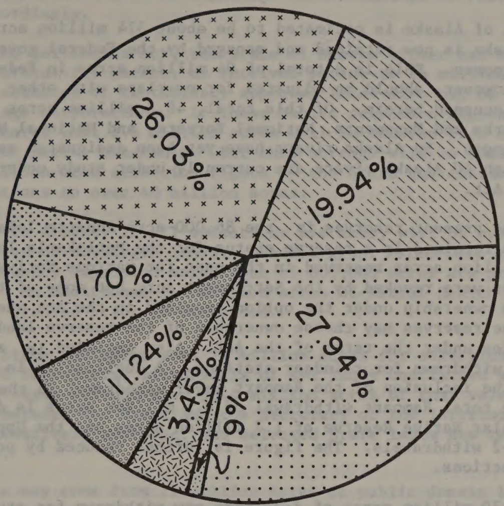
*U.S. Senate Committee on Interior and Insular Affairs, "A Definition of the Scope of Environmental Management."

PROJECTION OF FEDERAL, STATE, AND NATIVE LANDS AT THE CONCLUSION OF NATIVE AND STATE SELECTION RIGHTS



Total Area 373.8 Million Acres

		%	(Million)
⁙	State Lands	27.94%	104.45
░	Private Patents (exclusive of lands conveyed by the State to individuals)	.19%	.7
▨	Inland Waters	3.45%	12.9
▒	Native Lands	11.24%	42.0
░	Remaining Federal lands (Subject to applications under public land laws.)	11.70%	43.75
× ×	Present Federal Reserves	26.03%	97.3
▧	Additional Potential Federal Reserves from d2	19.94%	72.7
	Total Area	100.00%	373.80

ownership patterns in Alaska will be changing rapidly. Within this changing pattern, however, it is possible to project the broad landownership framework. It is within this framework that the Commission makes its recommendations on the d-2 lands.

The gross area of Alaska is estimated to be about 374 million acres. Nearly 25 percent of Alaska is now retained and managed by the Federal government for particular purposes. This is a total of 94 million acres in Federal reserves. That figure, however, should be adjusted for overlaps with other selections or withdrawals discussed herein. Of this total, 48.3 million acres are presently in National Parks and Monuments, National Forests, and National Wildlife Refuges and Ranges. No Alaska rivers have yet been designated as Wild and Scenic Rivers, although 40 Alaska rivers are currently under study under the Wild and Scenic Rivers Act.

Included in the present reserves is the 86,000-acre Annette Islands Reserve (which will be retained in a reserve status for the Metlakatla Indians), as well as nearly 3 million acres reserved in the past for various Native groups. These latter reserves were revoked by the Settlement Act, but some of these lands may go into Native ownership under the option provided in the Act whereby Natives living on these reserves may choose ownership of the reserve lands in lieu of lands and monies under the terms of the Act. Also included is another 1.3 million acres withdrawn for reindeer stations. A duplication in the acreage results from the inclusion of the Rampart power withdrawal in the total present reserves. The total Rampart withdrawal of 8.5 million acres is duplicated in the Venetie-Chandalar Native Reserve of 1.7 million acres and the Upper Yukon and Yukon Flats d-2 withdrawals. The figure is further reduced by potential Native and State selections.

If all of the 79 million acres of d-2 lands now withdrawn for study (adjusted bv the 6.3 million acres of the Rampart withdrawal also included in d-2 lands) are added by the Congress to Parks, Forests, Wildlife Refuge, and Wild and Scenic River Systems, approximately 44 percent of the State would be in "permanent" national reserves.

From the land and inland water area remaining, some State selections and private acquisitions have already been made. The 40-million-acre land selection rights of Alaska Natives under the Settlement Act and the remaining selection rights of the State of Alaska under the Alaska Statehood Act will also come from these lands.

It should be noted that Native ownership may exceed the 40-million-acre settlement figure by perhaps another 2 million acres, depending upon: (1) the election to take existing Native reserves; and (2) the total grants of land under the Alaska Native Allotment Act of 1906 which exceed the "hardship" lands provided for in the Settlement Act. Some overlap of acreage exists between lands available under Native selection rights and existing National Forest and Wildlife Refuge withdrawals. This overlap is explained by a provision of the Alaska Native Claims Settlement Act permitting limited Native selection rights in all Federal withdrawals, except in National Defense (National Petroleum Reserve No. 4 is, however, open to limited selection), and National Park lands. If these selection rights are fully exercised in the Tongass and Chugach National Forests and in National

Wildlife Refuge lands in other parts of Alaska, approximately 2.5 million acres will be removed from existing Federal withdrawals. However, provision was made in the Act to replace lands so removed from the National Wildlife Refuges, and approximately 1.9 million acres will be replaced. Total acreage of Federal reserves has been adjusted accordingly.

Prior to passage of the Settlement Act, the State of Alaska either had selected, received tentative approval for patent, or received patent to 26 million acres of land. Some of these selected or tentatively approved lands also may be selected by Alaska Native Village Corporations. If these Native selection rights are fully exercised, it is estimated that 2.6 million acres will be removed from current State selected land for Native ownership. But this acreage will be added back to the remaining 37.8-million-acre selection rights of the State and thereby increase remaining State selections to over 40 million acres.

Total State ownership in Alaska, if all selections are made, will be over 104 million acres, exclusive of submerged lands. General grant selections of 102.5 million acres and community expansion selections of 800,000 acres are provided for in the Statehood Act. An additional 1.1 million acres of Mental Health and University lands were granted prior to statehood.

In January 1972, the State nominated some 77 million acres for selection. When many of the March 1972 Secretarial withdrawals of d-2 lands conflicted with these State selections, the State relinquished 36.4 million acres of that selection after settlement of a suit between the State and the Secretary of the Interior. Thus, currently patented, tenatively approved, and selected State lands now total over 66 million acres.

Lands due to the State may come from 11 million acres of public domain lands now unappropriated and unreserved, from d-2 lands not permanently reserved by Congress, from lands now withdrawn for Native selection but not finally selected by Native Corporations, or from lands now withdrawn for classification by the Secretary of the Interior. They may also come from some lands now in existing Federal reserves upon revocation or reduction of such reserves.

The Statehood Act* specifically grants to the State of Alaska a right to select lands from revoked Federal withdrawals within 90 days of such revocation. Clear intent of the Congress in the Settlement Act** is to give the State the right to select from Native withdrawals after Native selections have been completed and from d-2 withdrawals not acted upon by the Congress. D-1 withdrawals on Native withdrawal areas, with some exceptions, provide for State selection after December 18, 1975. But d-1 withdrawals on existing Federal reserves and d-2 lands will require furthur classification before selection by the State can proceed.

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*Alaska Statehood Act, P.L. 85-508 (72 Stat. 339) Section 6(g).

**Senate Report No. 92-581, 92nd Congress, 1st Session, December 14, 1971.

Alaska contains nearly 23.8 million acres of inland waters. Glaciers account for 10.9 million acres of this total. Lakes cover 5.2 million acres, and riverine areas cover the remaining 7.7 million acres. The submerged lands of these inland lakes and streams that were navigable under the laws of the United States at statehood, with some exceptions, are owned by the State of Alaska. This results from application of the Submerged Lands Act of 1953, and State sovereignty. The exceptions to this transfer of title are any proprietary grants made by the United States prior to statehood and lands expressly retained by the United States when the State entered the Union.

In many of the d-2 lands under consideration, this ownership of submerged lands may present a use conflict between extraction of subsurface resources, for example, and other uses of adjoining lands. The exact amount under submerged land ownership of inland navigable waters cannot be determined at this time, but it may be as little as 5 million or as much as 8 million acres.

The Alaska constitution also provides that access shall be provided to the navigable waters of the State, and access to these navigable waters within d-2 lands and to navigable waters outside d-2 land boundaries should be provided.

A further problem area with respect to water should be noted. Although the United States retains constitutional authority over navigable streams for the purposes of navigation and flood control, the waters of Alaska, quite apart from land ownership, are held in common by the people of the State and are subject to appropriation under its laws.

It is the apparent position of the Federal government that, under a doctrine of reserved water rights, waters sufficient to meet the purposes of a Federal withdrawal are deemed reserved in Federal reserves heretofore or hereafter created without need to conform to provisions of State water appropriation laws.

In addition to the delineation of the status of Federal, State, and Native owned lands, there are privately owned or applied-for lands within Alaska which may affect the d-2 lands. Total acres is small compared with the millions of acres in other categories. Though the number of tracts is large, in many instances their location is strategic. Land status records now show 8,500 applications for approximately 21,000 tracts under the Alaska Native Allotment Act, and an estimated 50,000 to 60,000 unpatented mining claims. In addition, 70,000 acres of land in Alaska already has been patented to individuals under public land laws.

Finally, after major land ownerships have been established, over 45 million acres will remain under Federal administration as part of the public domain or as national resource lands.

When all adjustments have been made and problem areas such as determinations of submerged lands under inland navigable waters solved, nearly 59 percent of Alaska will remain in Federal ownership, 30 percent in State ownership, and 11 percent in Native corporate ownership. Private lands (other than Native holdings) can be expected to remain an insignificant part of the total for some time to come.

Some Economic Considerations

An array of problems closely linked to the present level and structure of the State's economy suggests that the expansion of economic activity in Alaska is in both the State and National interests. One must be careful, however, not to jump from this point to the conclusion that rampant, unfettered growth of Alaska's gross product is the solution to the State's economic problems. This is simply not the case, as is clearly evident in the economic history of Alaska to date. Some understanding of the shortcomings of growth as a measure of change in economic well-being can be found in an analysis of current measures of gross product.

The fixation nationally on gross national product (GNP) as an indication of economic well-being is one of the most conspicuous cases of a statistic becoming an end in itself. Somehow one is supposed to take comfort in increasing GNP; while declines in GNP, or decreases in its growth rate, are cause for alarm regardless of what is happening to the individual's circumstances.

There are two basic deficiencies in GNP as a welfare measure (which it was never intended to be in the first place). One deficiency relates to what is included as "production" that should not be, and what isn't deducted as "dis-product" that should be. Production required to undo the evironmental damage of another firm or industry is one example of a cost that is actually recorded as production. Environmental degradation that is not undone represents a social cost or "dis-product" that should be netted out of GNP over and above nonproduct adjustments. Failure to make these adjustments results in a substantial overstatement of actual productive activity.

The second major deficiency of GNP, and its Alaska gross product (AGP) counterpart is that economic well-being or progress is a multidimensional concept, while AGP or GNP is not. Measurement of economic well-being will be difficult, but it is not impossible. It is a multifaceted concept having both quantitative and qualitative dimensions. The concern over environmental quality or, more generally, the quality of life as a whole must be given explicit treatment in accessing economic progress.

The expansion of genuine economic choice is central to the measurement of economic well-being, but subject to a variety of qualifications. Three basic concerns are: (1) how the range of choices is measured; (2) how the range of choices varies among individuals; and (3) how the range of choices varies over time, both in the aggregate and for individuals. It should be noted that the idea of range of choices covers not only the ability to choose between competing brands of goods on the store shelf, but the ability to choose clean air over smog, to choose solitude over congestion, and to choose a variety of other qualitative situations that tend to reduce in number as economic activities expand.

To paraphrase the British economist, E. J. Mishan, the concept of economic progress can be summarized by stating that economic well-being does not result from economic growth per se; but from a reshaping of our production priorities with the needs of people and environmental quality, not the desires of industry, foremost.

It is apparent at this point in time that the basis for further economic progress in Alaska must be found in the utilization of natural resources. However, this utilization must be carefully pursued, not on an exploitative resource-by-resource basis, but rather through an integrated resource use program.

Alaska must avoid the pitfall (as it has so far in the case of oil) of giving its natural resources away through one or another form of subsidy, in the mistaken belief that the simple act of mining, or lumbering, or fishing is somehow "good" per se for the economy of Alaska. Qualitative, as well as quantitative aspects, of resource development must be considered.

In particular, one of Alaska's greatest natural resources is its natural scenic splendor. The value of this resource will increase if the quality of the Alaskan environment can be maintained, and its economic significance must not be underestimated. Rapid nationwide growth in the demand for outdoor recreation experiences and a limited supply are significant indicators of the potential increase in value of Alaska's scenic and other outdoor recreation resources. The commercial value of a major outdoor recreation facility, completely aside from any aesthetic or environmental consideration, may greatly exceed that of a mining venture in the same area.

The need in some cases to preclude one activity in preference to another is going to lead to some extremely difficult decisions. Real potential exists for conflict between tourism and outdoor recreation uses on the one hand, and some forms of mining and timber harvesting on the other. In these cases the economic merits of one or the other use will be an important factor.

It is a highly speculative undertaking to weigh the economic consequences of alternative uses where little is known about the potential for one use and almost nothing is known about the other. This is precisely the situation in several areas today. However, some generalizations can be made.

Both petroleum and mineral mining are increasingly attractive ventures in Alaska. Rapidly rising prices for a variety of metals and petroleum, increasing dependence on foreign sources, the concurrent weakening of the balance of trade, and increasing world demand all exert pressure to look more closely at Alaska resources.

At the same time, the high cost of Alaskan ventures, the relative uncertainty about Alaskan mineral deposits, the availability of minerals on the world markets, and the highly unstable price pattern of most metals counsel extreme caution in undertaking major investment activities. It is unclear at what point a significant expansion in mining in Alaska can be anticipated.

Demand conditions for commercial timber in the State are more favorable. Substantial increases in production could probably take place at current market prices if supply restrictions were to be altered.

The tourist-recreation industry has demonstrated a singularly impressive potential for expansion. Several factors help explain this trend, including growing leisure time, increasing personal income, a relatively high income elasticity for spending on tourism, and increased accessibility and interest in Alaska. The industry's growth has also been facilitated by the relative ease of entry into the industry. Generally, capital requirements are moderate and expectations high, making the industry attractive for the smaller entrepreneur.

The topic of the relative economic impact of mining and tourism is one that has been the subject of extensive debate, but little substantive research. Because of the relatively fragmented structure of economic activity in Alaska, it is probably desirable to evaluate relative industry impacts on a fairly specific area basis.

There will be a variety of problems, both conceptual and practical, in attempting to undertake such a comparative study; but some of the main points of reference can be set out. First, the scope of the uses must be compared. One industry may have a larger impact on a dollar-for-dollar basis, but its total level of activity may be less. A second question relates to the duration of activity. Are they seasonal, and does one have a more limited life expectancy than the other?

The forward and backward linkages of the activity with the rest of the economy must be considered. Will one or the other induce or force an expansion (or contraction) of other industries? Related interests are the employment and income multipliers. Are both direct and indirect income flows created, as is the case with the petroleum industry where both private and public sector flows are important? Does the activity lead to increased employment of unemployed Alaskans, or does the activity induce inmigration of labor?

The impact of industrial development on social costs is an often overlooked dimension of impact analysis, but one of particular concern in Alaska. These costs encompass a broad array, ranging from provision of educational facilities to law enforcement to environmental protection.

The answers to these questions will not come easily, but in some cases answers will be very necessary.

A Policy for the Arctic

Much of Alaska is to some degree distinct from the geography of the rest of the United States. One area in particular is truly unique--the Arctic. It is a vast land of great contrast, with majestic mountains, seemingly endless tundra, and abundantly varied wildlife. Within these same lands are also found some of the world's largest known reserves of crude oil and gas, whose potential has only been marginally explored. Extensive mineralization in the mountain areas of the Arctic has been indicated, but the areas remain largely untested.

While the Arctic appears to be a rugged and harsh land, it is at the same time frighteningly fragile and delicate. Its ecological structure is always in precarious balance, and minor disturbances can result in disastrous effects. The impact of man and his machines is all too evident, often leaving lasting testimony to his clumsy intrusions.

Delicate as its ecology may be, it is certain that the resource wealth of the Arctic will ultimately be used. The process has already begun. As the needs of the State, the Native, and the Nation become greater, the process will accelerate. This does not and must not spell the destruction of the Arctic, however. One civilization long ago learned to live in harmony with the land, and the ability to attain another type of harmony in the Arctic now exists.

Achieving this balance will require a new kind of cooperation and control, an acceptance of the need to utilize the elements of the Arctic, and a determination to find new ways to survive and work without leaving permanent imprints. It means the recognition of the necessity to minimize man's impact on the area and to adhere to the implications of this in such crucial areas as transportation and settlement patterns.

The need for a policy for the Arctic is clear. It must encompass the unique dimensions of the Arctic and at the same time relate the interests of Alaska, the Natives, and the United States.

Land Use and Subsistence

In several recommendations related to d-2 areas, land use for subsistence purposes has been suggested. This proposed use raises three important issues.

1. What activities fall within the concept of subsistence use?

2. How important is subsistence use in Alaska presently?

3. Can present levels of subsistence activities be continued indefinitely without leading to environmental deterioration?

As one step in gaining understanding into these questions, the Commission sponsored a conference on "Subsistence Use of Fish and Game." Several points emerged in the process of the conference, some of which are summarized below.

First, legislative intent of the ANCSA clearly indicates that continuing Native subsistence uses are to be permitted.

Second, the terms subsistence or subsistence use evoke a broad range of images. One view constrains subsistence activity to fishing and hunting where the catch is used only by the family of the provider, and is the dominant form of nutrition. From this point there runs a broad spectrum of activities increasingly varied in scope that are encompassed in subsistence activity. At the far end of the spectrum are some commercial activities, such as small scale mining and sales of arts and crafts. Also, at this end of the spectrum is hunting of a primarily recreational nature that, nevertheless, remains a significant aspect of the hunter's cultural heritage.

In addition to individually expressed views, several uses of the term "subsistence" have been expressed in proposed and actual legislation and regulations. The Department of the Interior, in the Marine Mammal Act regulations, states that:

> "Subsistence" means the use by Alaskan Natives of marine mammals taken by Alaskan Natives for food, clothing, shelter, heating, transportation, and other uses necessary to maintain life of the taker or for those who depend on the taker to provide them with such subsistence.

Proposed regulations under the Marine Mammal Act, as set forth by the Department of Commerce, include the following:

> "Subsistence purposes" shall mean with respect to any marine mammal the direct consumption by Alaska Natives of all usable portions of such mammal for food, clothing, shelter, hunting, transportation, and the other necessities of life.

The Act itself (P.L. 92-522) provides "that any edible portion of marine mammals may be used in Native villages and towns in Alaska or for Native consumption."

In proposed legislation before the Alaska Senate (Committee Substitute for Bill No. 99), the concept is defined as follows:

> "Subsistence" means the taking of fish and game for use and consumption by the person taking the fish or game and his family or household or for the consumption of his domestic animals; however, by-products of the fish or game may be used in the construction of Native handicrafts.

Finally, Section 16.05.940(17) of the Alaska Statutes states that:

> Subsistence fishing means the taking, fishing for, or possession of fish, shellfish, or other fishery resources for personal use and not for sale or barter.

Although complete agreement is lacking, it is clear that the scope of subsistence activities can include at least those related to obtaining food, shelter, and clothing necessary to maintain life in the subsistence unit (be it the family or some larger social unit). The primary problem then becomes one of deciding what is necessary to maintain life or, somewhat more broadly, a way of life.

There are several concepts of subsistence that may be of use in clarifying some of the positions on subsistence. The first of these, physiological subsistence, denotes a total dependence upon the natural environment for all means of survival when and where survival itself is in very delicate balance. This type of subsistence life is probably largely unknown in Alaska today.

Closely related to this concept is the idea of psychological or cultural subsistence. In this pattern of subsistence the standard of living is somewhat higher than that required for physiological subsistence, and at the same time the balance of life is less tenuous. Another dimension to this way of subsistence may be intercultural links with other societies and the use of various nontraditional forms of technology and assistance. However, the fundamental philosophical tie continues to be that of nature, land, and man in concert.

A basic problem with both the physiological and psychological versions of subsistence activity is that they present major problems in terms of operational decisionmaking. In both cases the delineation of subsistence activity is highly subjective. A partial solution to the problem may be found in an economic model of subsistence generally referred to as the subsistence economy.

The subsistence economy is by definition one in which all economic activity is carried out for the purposes of present consumption, and where economic decisions are made on the basis of traditional patterns rather than in response to some particular objective function such as profit maximization. It does not require that each household or family unit necessarily produces all of its own needs since extensive barter activity, as well as some cash transactions, may be an integral part of the system.

A fundamental characteristic of the system is that the process of saving or capital accumulation is negligible over time and that the per capita standard of living resulting from internally generated activity is relatively constant. These general characteristics of the subsistence economy would appear to be consistent with much of the current economic activity in rural Alaska.

There is one final frame of reference for subsistence activity that may be of some use, particularly where some control of these activities may be required. Subsistence activity, within a specified geographic area, must be in equilibrium with the general environment. If it is not, the environment deteriorates and the subsistence activity ultimately must cease.

In this concept those activities in rural Alaska which are carried out in pursuit of individual or family livelihood, and which do not significantly disturb the environmental balance of the region, would be considered permissible subsistence activities. Hence, wood gathering and timber for housing, the sale of Native art, and the use of small scale mining proceeds to acquire cash for the purchase of essentials all could fall within the scope of subsistence activities. In a very real sense, this concept of subsistence says that most activity in rural Alaska today that is consistent with the maintenance of environmental quality and is integral to the provision of family livelihood falls within the subsistence sector.

It is towards the last two concepts, economic subsistence and subsistence within environmental parameters, that the Commission has leaned in its land use recommendations.

The second major issue surrounding the topic of subsistence relates to the importance of subsistence activity for Alaska's people. Several attempts have been made to quantitatively assess its importance and these efforts have only served to highlight the problems of achieving operationally workable concepts of subsistence. However, the following tentative assertions can be made.

1. Practically all Alaska Natives, rural and urban, as well as many non-Natives, depend upon wild game and fish for varying degrees of their protein requirements. In some cases the dependence is minimal, but more frequently the availability of fish and game almost entirely determines protein intake for rural Alaskan Natives. Broadly speaking, some 60,000 to 70,000 Alaskans, mostly Native, for a direct interest in subsistence land for hunting and fishing.

2. Slightly more than one-half of the Alaskan population lives in non-urban areas, and a substantial number are Natives. Subsistence activity, as delineated under the concept of economic subsistence activity, is a major means of livelihood for most of these peoples. Estimates of subsistence dependency vary. Actual dependency varies from family to family, but levels of dependence below 40 percent are probably infrequent. Levels of dependence above 85 to 95 percent are also probably infrequent, with most instances rather broadly distributed between the 50 to 75 percent levels.

These impressions tend to be substantiated by data contained in the 1970 census. The basic approach in deriving these estimates from census data is to compare poverty income threshold levels with median rural community income levels.

The U.S. average poverty threshold income for a family of six persons was just under $5,000 in 1970. Assuming that the dollar costs of such a standard of living are double that for most rural areas of Alaska, the entry level for a typical Native family would be set at $10,000. This assumption seems quite reasonable (in fact, conservative) in view of the fact that the Bureau of Labor Statistics' lower standard budget (in its 3 Budgets Index) is over $10,000 in Anchorage. It is further recognized that Anchorage costs are substantially below those in rural areas of the State.

Comparing this threshold level income of $10,000 with median income levels for various rural communities in general suggests that substantial cash income deficiencies exist. Table 1 presents some of the contrasts.

TABLE 1

MEDIAN FAMILY INCOME IN SELECTED ALASKAN CENSUS DIVISIONS, 1970

Aleutian Islands	$8,544
Angoon	2,385
Barrow	8,450
Bethel	4,074
Kobuk	6,690
Kuskokwim	3,744
Nome	7,733
Upper Yukon	6,929
Wade Hampton	3,270
Anchorage	14,537
Juneau	17,616

Source: Bureau of the Census, General Social and Economic Characteristics - Alaska, 1970, pp 3-182 - 3-184.

In interpreting these figures it should be noted that the Census makes no distinction on the basis of Native versus non-Native. In general, non-Natives, in predominantly Native census divisions where subsistence use is high, are teachers, social workers, government employees, and merchants. They tend to be in the upper end of the income distribution. Thus, the median income figure overstates the median income of Native families; or, conversely, understates the difference between average Native family money income and the dollar costs of an absolute minimum standard of living.

One must be extremely careful in suggesting that the difference between money income and threshold income represents the dollar value of subsistence activity. The estimates obtained in this manner are extremely general and indicate, at best broad orders of magnitude. Taken with this caution in mind, the data suggest that dependency levels of 50 to 75 percent are not uncommon. Since the more remote villages may be less well represented in these data, and at the same time more dependent on subsistence, it is clear that subsistence activity continues to play an important role in the economic well-being of many Alaskans.

A very real question exists as to whether or not Alaska's rural areas can continue to support such substantial subsistence use. Two interrelated factors are the primary reasons for raising the question. First, rural population, at least for the last 10 years, has been increasing. Second, technological changes, in particular the snow machine, have increased the pressure on game resources quite substantially in the process of subsistence hunting.

Only the most tentative conclusions can be realized; but it seems apparent that subsistence activity, particularly as it relates to hunting, may have to come under increasing control in the not to distant future.

Transportation

The impact of transportation on the quality of life is substantial. A vast array of tangible and intangible benefits can arise from the existence of an appropriate transportation system. On the other hand, negative consequences may result, including ecosystem disturbances, social disruption, and the depletion of otherwise renewable resources.

In confronting this dilemma, several policy parameters relating to land use and transportation planning have been identified. The Commission is vitally concerned that land use determine transportation patterns, and not the reverse. A major corollary is the desire to minimize the adverse impacts of any transportation system that proves necessary to achieve designated land use patterns.

Alaska's land mass includes unusual and often unique topographic and geologic features which must be considered in the development of appropriate transportation systems. It is essential that a genuine multimodal system be created, one which is compatible with the maintenance of environmental quality. The employment of the term "system" highlights the fact that the mere presence of alternative forms of transportation does not necessarily constitute a multimodal system. Instead, "system" as used here means that a variety of transportation modes are used in an optimal manner to satisfy differentiated user needs. The optimality of the system is determined according to preestablished objective standards, such as frequency, reliability, quality, and costs of service. Such a system demands great creativity in design and, at a minimum, the implementation of major innovations in transportation technology and thinking. Simple transplants of transportation patterns from an earlier era, or other locales, will not meet the developing needs of Alaska.

Broadly speaking, the transportation system should facilitate economic and social well-being in the State. As such, it must take into account special characteristics of some user needs. At the same time that some may wish to travel at nearly the speed of sound across hundreds of miles, others need to traverse frozen riverways or to move bulk cargo over rugged mountain terrain. Still others desire to be isolated from some forms of transportation; e.g., a new highway may be perceived as jeopardizing subsistence hunting or fishing patterns in an area.

Three primary goals of transportation can be distinguished. The first of these relates to the movement of people, while the second focuses on general cargo and freight movement. The third set of goals concerns specialized transportation activities such as those related to natural resource exploration and extraction. Superimposed on these categories is the distinction between interregional and intraregional service requirements.

There are other dimensions of a good transportation system that must also be recognized. Investment in significant transportation facilties is a major undertaking, and once underway is difficult to undo. Care should be exercised in developing specialized facilities, particularly for natural resource development activities, to be sure that the true social costs of the undertaking are fully met. As a matter of general policy, transportation should not be used as a subsidy to resource development. If exceptions to this policy are to be made, it should be the burden of the proponent of the exception to conclusively demonstrate that the project is truly in the public interest; and informed public discussion of such questions should be encouraged.

Likewise, proposals for public investment for transportation facilities as a cue to "general economic development" must be scrutinized carefully, especially when claims are asserted that the mere existence of transportation facilities would insure economic development. The relationship between transportation development and economic development is not necessarily one of cause and effect; indeed, evidence suggests that economic development prompts the growth of transportation facilities, not that the presence of transportation routes, by themselves, prompts development.

ALASKA NATIVE CLAIMS SETTLEMENT ACT

The Alaska Native Claims Settlement Act enacted on December 18, 1971 extinguished the aboriginal land claims and any aboriginal hunting and fishing rights of Alaska Natives. Its terms provided the framework within which the basic land ownership pattern of Alaska would be established and through which Alaska Natives might fully participate in the social, political, and economic life of the State and Nation.

The Act provided for:

> ultimate conveyance of some 40 million acres of Federal land (and some State-selected land near Native villages) to Alaska Natives in fee simple ownership;
>
> the payment of $462,500,000 in appropriated Federal funds to Alaska Natives over 11 years, and for the payment of an additional $500,000,000 derived from a 2 percent royalty on leasable minerals produced from Federal uplands and from State-selected lands patented to the State after the date of the Act;
>
> the formation of Native Village and Regional Corporations to take title to most of the lands granted (some lands will be patented directly to Native individuals or reconveyed to them by Village Corporations) and to administer the funds and revenues granted;
>
> the withdrawal of up to 80 million acres of land for study and potential inclusion in additional National Forest, Park, Wildlife Refuge, and Wild and Scenic Rivers Systems;
>
> the revocation of Public Land Order 4582 which had withdrawn all public lands in Alaska from disposal and selection by the State; the revocation of existing Native reserves (unless residents of reserves elect within 2 years to receive Native reserve land rather than the land and monetary benefits provided in the Act); and the revocation of the Native Allotment Act; and
>
> enrollment within 2 years of all Alaska Natives living on the date of the Act of one-fourth or more Alaska Indian, Eskimo, or Aleut blood; or, if blood quantum cannot be proved, of those who are accepted as Alaska Natives by the village or group in which they claim membership.

Within this broad framework, the Act set out the process for determination of the Native lands to be conveyed, distribution of funds and revenues, establishment of corporate structures which will manage Native lands and monies, and the formulation of broad guidelines for determining what additional lands will be available for fulfillment of the State of Alaska's selection rights granted under the Alaska Statehood Act and for retention by the Federal government.

NATIVE LANDS

From 25 townships withdrawn around each of over 200 named villages, every eligible village is entitled to select a minimum of 69,120 acres and a maximum of 161,280 acres, the acreage allotment to be determined on the basis of its Native population. (Ten villages in Southeast Alaska are limited to a selection of 23,040 acres each from a nine-township withdrawal area around each village.) Title to the surface estate of these lands will be conveyed to the Village Corporation, and title to the subsurface estate will be conveyed to the appropriate Regional Corporation. From these lands, the Village Corporation must also make conveyances for existing airports, municipal purposes, and individual occupancy. No more than 69,120 acres may be selected from National Forest, Wildlife Refuge lands or from State-selected lands within the withdrawal area. If total village selections do not equal 22 million acres, the remaining village entitlement will be allocated among the Regional Corporations (excluding the Regional Corporation for Southeast Alaska) on the basis of population. The Regional Corporations will then reallocate this selection right to these additional lands to villages within the region.

Sixteen million acres of land may be selected by Regional Corporations (again excluding the Southeast region) on a "land-loss" basis; that is, each Regional Corporation will be entitled to receive both surface and mineral title to that proportion of the 16 million acres that the total land area within the boundaries of the region bears to the total land area of all of the State, excepting Southeast Alaska. Regional Corporations are limited in their selection rights to odd numbered townships in odd numbered ranges and even numbered townships in even numbered ranges in the village withdrawal areas.

If withdrawal areas around each village are insufficient to meet the village and regional selection rights, other lands equaling three times the selection deficiency are to be withdrawn to meet these selection needs. Such withdrawals are to be made from unreserved, vacant, and unappropriated public lands (this excludes State-selected lands or existing Federal reserves) of a character, insofar as possible, similar to those of the original village withdrawal.

The remaining 2 million acres of Native land entitlement will be withdrawn and conveyed for existing cemetery sites and historic places; for groups not otherwise qualifying as Native villages; for Natives residing in Sitka, Kenai, Juneau, and Kodiak; for Natives applying for and qualifying for Native Allotments; and for individual Natives whose primary place of residence is outside village withdrawal areas. For 20 years real property interests conveyed to individual Natives, Native groups, or Native Corporations are exempt from State and local taxation unless they are developed or leased to third parties.

DISTRIBUTION OF FUNDS AND REVENUES

Appropriated funds and revenues derived from the 2 percent royalty on leasable minerals make up the total monetary settlement of $962.5 million; which will be divided among the Regional Corporations on the basis of enrolled population.

Seventy percent of revenues derived by any region from timber resources and subsurface estates patented under the Act will be shared by all Regional Corporations, also on the basis of enrolled population. (If a Regional Corporation is formed for Natives who are not residents of Alaska, it will not share in this distribution.)

The Regional Corporations are also required to distribute 10 percent on a per capita basis and 45 percent to villages of all corporate funds during the first 5 years after the Act. Thereafter, no per capita distribution is required, but 50 percent of all corporate funds (including revenues from timber and subsurface estate) is to be distributed proportionately to Village Corporations and to regional shareholders who are not village shareholders.

Distribution of appropriated funds and shared revenues under the Act are not taxable; but all rents, royalties, profit, and other revenues are taxable in the same manner as such revenues and proceeds are taxable when received by other than Native individuals or corporations.

CORPORATE STRUCTURE

No less than 7 or more than 12 Native Regional Corporations conforming to 12 geographic regions and Native associations set out in the Act are to be formed under the laws of the State. A thirteenth region may be formed for Natives who are not permanent residents of Alaska upon the election of a majority of such eligible adult Natives.

Each enrolled resident of a region will be issued 100 shares of stock by the appropriate Regional Corporation and be entitled to dividends and stock distribution on the basis of his stock ownership. For a period of 20 years the stock and dividends of each shareholder may not be sold, pledged or subjected to lien or judgment. Nor is the receipt of stock subject to taxation. Thereafter, the stock will be fully alienable by its owners.

Native village residents must also incorporate as either profit or nonprofit corporations in order to receive patents to lands and other benefits under the Act. The same restrictions placed on alienation of regional corporate stock also apply to village corporate stock.

STATE LANDS

Lands patented, tentatively approved for patent, or identified for selection by the State of Alaska prior to January 17, 1969 are not subject to Native selection rights (with the exception of a maximum of 69,120 acres of tentatively approved or selected land in each of the village withdrawal areas which may be selected by an eligible village).

Lands remaining in Native withdrawal areas after completion of Native selections may be made available for State selection, as may lands in the remaining public domain and lands released from other areas withdrawn for study and classification.

All prior valid existing rights of individual landowners, lessees, or claimants are recognized by the Act.

FEDERAL LANDS

Withdrawals of up to 80 million acres of land for study and possible addition to or creation of National Park, Forest, Wildlife Refuge, and Wild and Scenic Rivers Systems are specifically authorized in the Act. From these areas the Secretary of the Interior will make recommendations to the Congress within 2 years from the date of the Act on areas to be designated by Congressional Act for each of the four systems named.

Withdrawals by the Secretary are authorized by the Act for the protection of the public interest and for classification and opening of lands for appropriation under the public land laws.

Lands not included in existing Federal reserves, withdrawals for Native selection, or withdrawals for either of the purposes cited in the above paragraph remain as public domain lands and are open to entry and appropriation under existing public land laws.

FEDERAL-STATE LAND USE PLANNING COMMISSION

As established in the Act, the Joint Federal-State Land Use Planning Commission for Alaska is composed of 10 members. The Commission is chaired jointly by a Federal co-chairman appointed by the President, and the Governor of Alaska. Four members are appointed by the Secretary of the Interior and four by the Governor, one of whom must be an Alaska Native. The Commission is given a broad advisory mandate to make recommendations on lands available for Federal, State, or Native ownership; to undertake a process of land use planning; and to make recommendations on necessary and desirable changes in Federal and State laws, policies, and programs.

Many specific deadlines, procedures, and provisions of the Alaska Native Claims Settlement Act cannot be included in this brief review of its major provisions. To fully understand the complexities of the Act, it is necessary to review it in detail and relate it to subsequent administrative action of the Secretary of the Interior affecting Alaska.

JOINT FEDERAL-STATE
LAND USE PLANNING COMMISSION
FOR ALASKA

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Joseph P. Josephson
State Co-Chairman Designee for
Governor Egan

Jack O. Horton served as Federal Co-Chairman from July 1972 until March 1973.

Max C. Brewer
Harry E. Carter
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Jacob Adams and William Wakeland served on the Advisory Committee from October 1972 to July 1973.